ORDER NO. TSD 82040003C2

Service Manual

FM/MW/LW/FM STEREO RADIO WITH CASSETTE TAPE DECK AND RECORD PLAYER

Stereo Music Centre

SG-V04

Specifications

AMPLIFIER SECTION

Power Output	RMS 14W x 2 (THD 5%, 4Ω) One channel driven
	RMS 10W x 2 (THD 5%, 4Ω) Both channels driven
Input Sensitivity & Impedance:	
Mic	1.5 mV, 1.5 kΩ
Aux	250 mV, 47 kΩ
Rec. Out & Impedance	150 mV, 10 kΩ
Tone Controls:	
Bass	±8 dB at 100 Hz
Treble	±8 dB at 10 k Hz
Output Impedance	4Ω

FM TUNER SECTION

Frequency Range	87.5 MHz ~ 108 MHz
Intermediate Frequency (IF)	10.7 MHz
Sensitivity	2.5 μV (S/N 26 dB mod. 40 kHz) (DIN) at 300 Ω
Image Ratio	35 dB (98 MHz)
Signal/Noise Ratio	63 dB (at 1 kHz, 60 dB, 40 kHz)
Distortion	MONO: 0.5% (at 1 kHz, 60 dB, 40 kHz)
	STEREO: 0.6% (at 1 kHz, 60 dB, 40 kHz)
Stereo Separation	40 dB (at 1 kH, 60 dB, 40 kHz)

AM TUNER SECTION

Frequency Range	MW: 525 kHz~1605 kHz (571m ~ 187m)
	LW: 150 kHz~350 kHz (2000m~857m)
Intermediate Frequency (IF)	450 kHz
Sensitivity	MW: 180μV/m (1 MHz)
	LW: 300μV/m (240 kHz)
Image Ratio	MW: 40 dB (1 MHz)
	LW: 47 dB (240 kHz)

TAPE DECK SECTION

Track System	4-Track, 2-Channel
Recording System	AC Bias (50 kHz) with Dolby NR System
Erasing System	AC Erase (50 kHz)
Tape Speed	4.75cm/sec. (1-7/8 i.p.s.)
Frequency Response	35 Hz~15 kHz (Normal) } (DIN)
	35 Hz~15 kHz (CrO_2) } (DIN)
	35 Hz~16 kHz (Metal) } (DIN)
Signal/Noise Ratio	
DOLBY NR-OUT	50 dB (Normal) } (DIN)
	52 dB (CrO_2) } (DIN)
	52 dB (Metal) } (DIN)
DOLBY NR-IN	58 dB (Normal) } (10 dB or more improved at more than 5 kHz) (DIN)
	60 dB (CrO_2) } (10 dB or more improved at more than 5 kHz) (DIN)
	60 dB (Metal) } (10 dB or more improved at more than 5 kHz) (DIN)
Erase Ratio	60 dB (DIN)
Wow & Flutter	0.2% (WRMS)

PHONO SECTION

Turntable System	Belt-drive, Fully Automatic Turntable Auto start/Auto lead-in, Auto-return
Turntable Platter	Diameter 28 cm (11")
Turntable Speed	33-1/3 rpm and 45 rpm
Photo-Motor	Electro-Governor DC Motor
Wow and Flutter	0.15% (WRMS), ±0.25% (DIN WTD)
Cartridge	Ceramic cartridge (EPC 09S TAD)
Stylus	Diamond tip (EPS 27 STSD)
Stylus Pressure Range	5 ~ 7g

POWER CONSUMPTION	75W
POWER SUPPLY	AC 110V, 120V, 220V, 240V, 50/60 Hz
DIMENSIONS (W x H x D)	450 x 125 x 460 mm
WEIGHT	6.4 kg

* Specifications are subject to change without notice for further improvement.

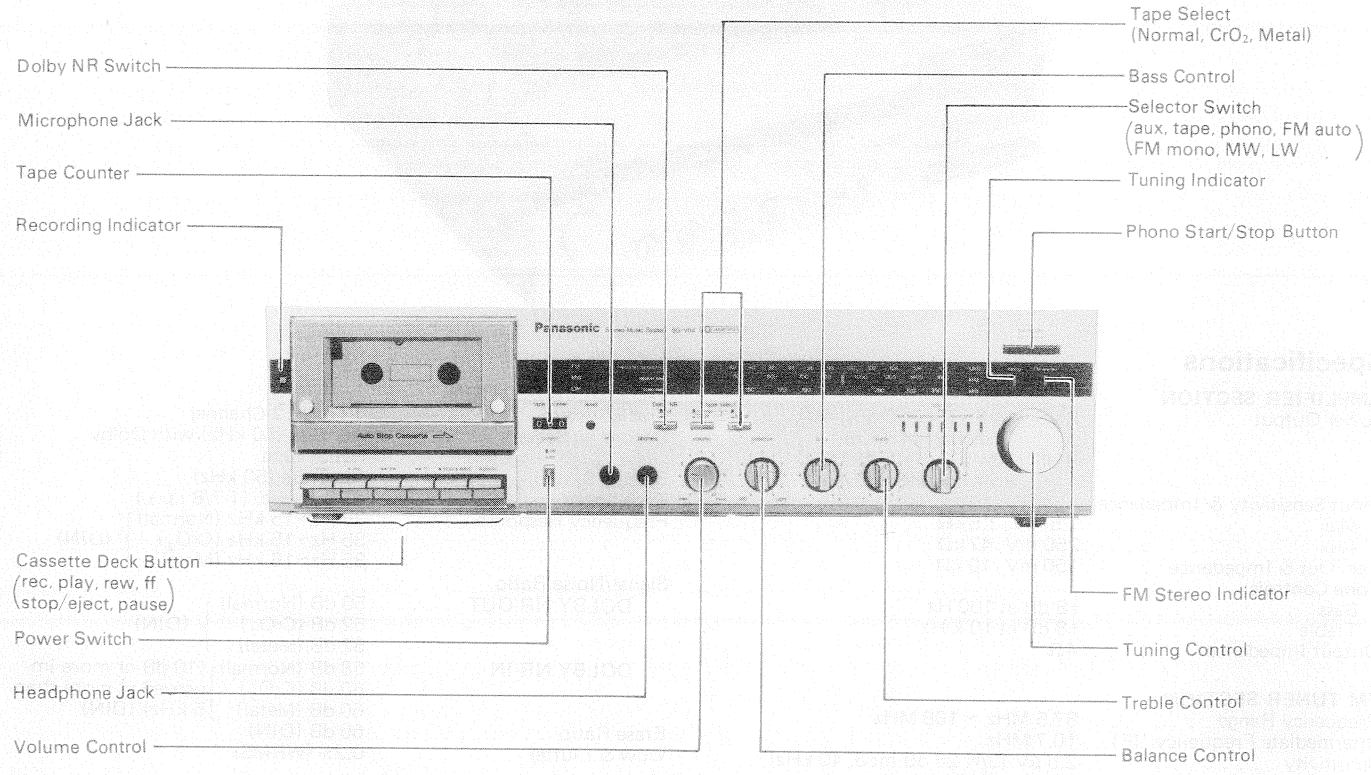
Panasonic

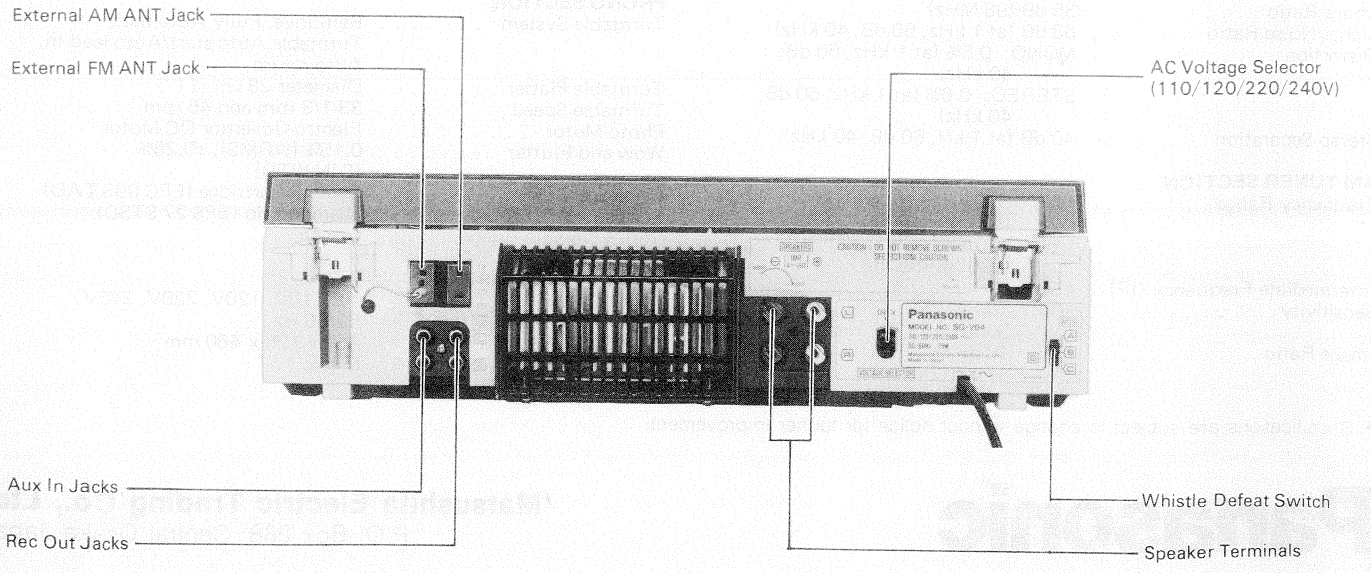
Matsushita Electric Trading Co., Ltd.
P.O. Box 288, Central Osaka Japan

CONTENTS

	Page
Specifications	1
Location of Controls	2
Disassembly Instructions	3
Alignment Instructions	4, 5
Dial Coard Stringing Guide	5
Alignment Points	6
Service Aid	6
IC Block Diagram	7
Servicing the Record Player	8
Replacement Parts List	9, 10, 11, 12, 15, 16
Circuit Board and Wiring Connection	13
Schematic Diagram	14
Block Diagram	17
Parts Location of Cabinet and Chassis	18
Replacement Parts List of Cabinet and Chassis	19
Exploded View of Cassette Tape Deck	20
Replacement Parts List of Cassette Tape Deck	21
Exploded View of Record Player	22
Replacement Parts List of Record Player	23

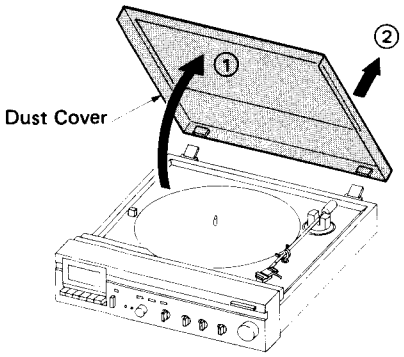
LOCATION OF CONTROLS



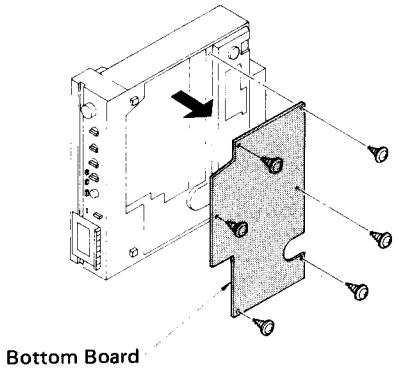


DISASSEMBLY INSTRUCTIONS

❶ Remove Dust Cover

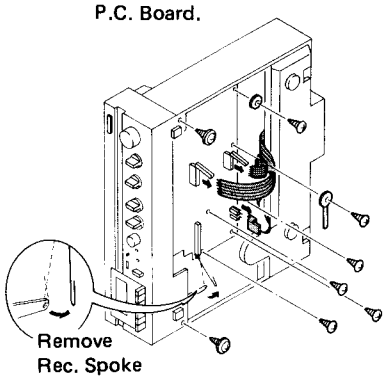


❷ Remove Bottom Board

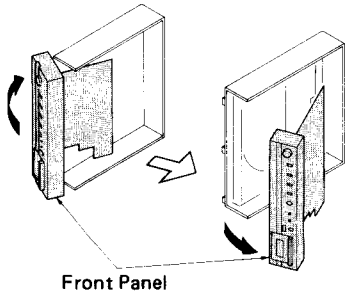


❸ Remove Screw

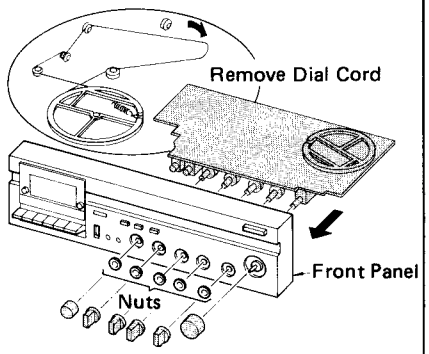
CAUTION: Disconnect the lead clamp for P.C. Board.



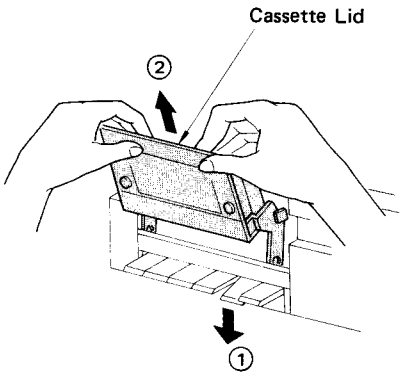
❹ Remove Front Panel-1



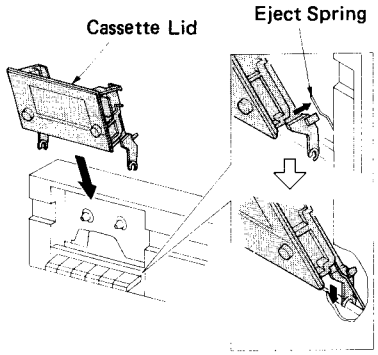
❺ Pull Knobs and Remove Front Panel-2



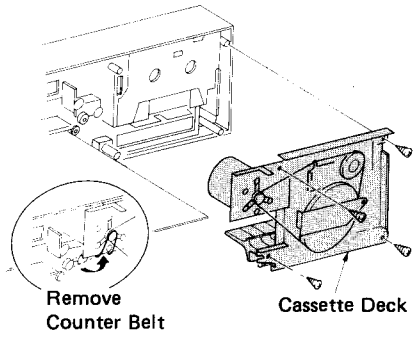
❻ Remove Cassette Lid



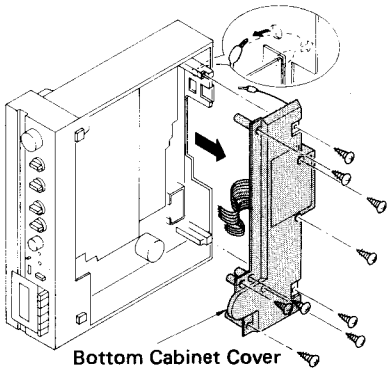
❼ Install Cassette Lid



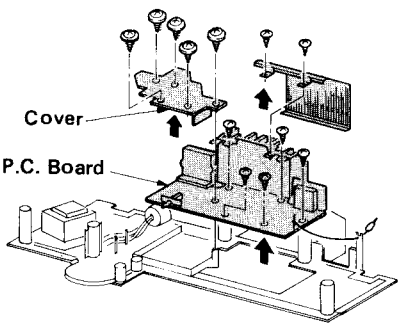
❽ Remove Cassette Deck



❾ Replace Bottom Cabinet Cover



❿ Remove P.C. Board



Caution: Earth wire should be connected between cassette mechanism and chassis to prevent buzzing noise, when you removed cassette deck from front panel.

- **To Replace Parts on P.C. Board**
  - **RF, Cassette P.C. Board** . . . . . Refer to ❶ ~ ❹
  - **AF P.C. Board** . . . . . Refer to ❶, ❷, ❾, ❿
- **To Remove Front Panel** . . . . . Refer to ❶ ~ ❻, ❽
- **To Remove Cassette Deck** . . . . . Refer to ❶ ~ ❹, ❻, ❽

ALIGNMENT INSTRUCTIONS–1

■ **Radio**

Control Positions:
1. Volume Control . . . Center (AM-IF and RF, FM-RF); Minimum (FM-IF)
2. Bass Control . . . . . Center
3. Treble Control . . . . . Center
4. Balance Control . . . Center
5. Function Selector . . MW, LW, FM AUTO, FM MONO
6. Power Switch . . . . . ON
7. Output of signal generator should be no higher than necessary to obtain output reading.
8. Make certain that speaker system is connected to the receiver when aligning. (or use 4Ω dummy load resistors).

STEP	SIGNAL GENERATOR OR SWEEP GENERATOR		RADIO DIAL SETTING	INDICATOR	ADJUST	REMARKS
	CONNECTION	FREQUENCY				
AM-IF AND RF ALIGNMENT						
1 (MW)	Fashion loop of several turns of wire and radiate signal into loop of receiver.	450kHz 30% Mod. with 400 Hz	Point of non-interference	Output meter across speaker jack (L).	T201 (AM IF) T202 (AM IF)	Adjust for maximum output.
2 (MW)		513 kHz 30% Mod. with 400 Hz	513 kHz		L203 (MW OSC) L201 (MW ANT)	• Adjust for maximum output by sliding coil L201 along ferrite core. • **Refer to Note.**
3 (MW)		1645 kHz 30% Mod. with 400 Hz	1645 kHz		CT203 (MW OSC Trimmer) CT201 (MW ANT Trimmer)	Adjust for maximum output. Repeat steps (2) and (3).
4 (LW)		142 kHz 30% Mod. with 400 Hz	142 kHz		L204 (LW OSC) L202 (LW ANT)	• Adjust for maximum output by sliding coil L202 along ferrite core. • **Refer to Note.**
5 (LW)		363 kHz 30% Mod. with 400 Hz	363 kHz		CT204 (LW OSC Trimmer) CT202 (LW ANT Trimmer)	Adjust for maximum output. Repeat steps (2) and (3).
Note: Cement antenna coil L201, 202 with wax after completing alignment.						
FM-IF ALIGNMENT						
1	High side through 5pF to point TP101 and TPE (earth).	10.7 MHz (400 kHz SWP).	Point of non-interference	Connect vert. amp. input of scope to point TP201 and TP202 (ground).	T101 (FM IF) T203 (FM Disc)	• Adjust for maximum amplitude and symmetrical curve. • **Refer to Note.**
2					T204 (FM IF) T203 (FM Disc)	Adjust for maximum amplitude and proper linearity between about ±100 kHz markers.
Note: Before aligning step 1, turn the corest of T204 fully counterclockwise.						
FM-RF ALIGNMENT						
1	Connect to EXT. FM antenna terminal through Dummy antenna. (300Ω)	87.35 MHz 30% Mod. with 400 Hz	87.35 MHz (Set the dial pointer to the left end of the scale. (or lower frequency edge.)	Output meter across speaker jack (L).	L102 (FM OSC Coil) L101 (FM ANT Coil)	Adjust for maximum output.
2		108.3 MHz 30% Mod. with 400 Hz	108.3 MHz (Set the dial pointer to the right end of the scale. (or upper frequency edge.)		CT102 (FM OSC Trimmer) CT101 (FM ANT Trimmer)	Adjust for maximum output. Repeat steps (1) and (2).

Notes: 1. As three output readings will be present, adjustments must be made at center frequency.
2. To correct the drift of FM band coverage (87.5 or 108 MHz) adjust the coil L102 and the trimmer CT102.

ALIGNMENT INSTRUCTIONS–2

■ FM Stereo Alignment

Control Positions:
Volume Control . . . . . Audible level of speaker sound
Bass, Treble Control . . . . . MIN
Band Selector . . . . . FM AUTO
Balance Control . . . . . Center

EQUIPMENT CONNECTION	ADJUST	REMARKS
Connect frequency counter to TP301 and TP202 (ground) at 98 MHz, non modulation with 60 dB input (Mono Signal).	VR301	Adjust VR301 for 19.10kHz ± 50 Hz on frequency counter reading.

■ Cassette Tape Deck Alignment

BIAS ALIGNMENT

Control Positions: 1. Tape Deck Condition . . . . . Recording Condition 3. Whistle Defeat Switch . . . . . B Side
2. Dolby Switch . . . . . OUT

STEP	ALIGNMENT ITEM	VTVM CONNECTION		TAPE SELECTOR	ADJUST	REMARKS
		Positive	Negative			
1	Erase Bias	TP801	TP802	METAL	VR803	Adjust VR803 to get 150±5 mV reading on VTVM.
2	Recording Bias	TP401 (L ch) TP402 (R ch)	TP403	NORMAL	VR801 VR802	• Adjust VR802 to get 3.8±0.1 mV reading on VTVM. (Metal: 8.4±1.0mV) (CrO_2: 4.9±0.2mV) • Adjust VR801 to get same voltage.

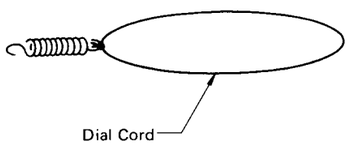
AZIMUTH, DOLBY, REC CURRENT, ALIGNMENT

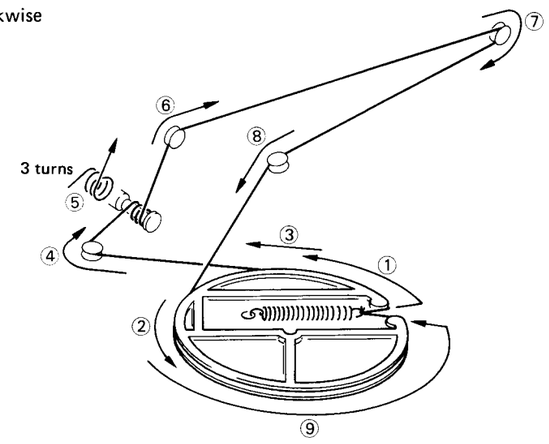
Control Positions: 1. Tape Deck Condition . . . . . PLAY Condition
2. Tape Selector . . . . . NORMAL

STEP	ALIGNMENT ITEM	VTVM CONNECTION		TEST TAPE LEVEL	DOLBY SWITCH	ADJUST	REMARKS
		Positive	Negative				
1	R/P Head Azmimuth	Speaker Terminal	Speaker Terminal	10 kHz −5dB	OUT	Head Screw	• Adjust screw for max. indication on VTVM.
2	Dolby Level	TP803 (L ch) TP804 (R ch)	TP403	400 Hz 200 nWb/m	IN	VR401 VR402	• Adjust VR401 and VR402 for 580±20 mV reading on VTVM.
3	Rec Current	TP401 (L ch) TP402 (R ch)	TP403	–	IN	VR403 VR404	• Connect Pin no. 1 and 2 of MC2. • Apply 1 kHz, 410 mV to AUX IN. • Adjust VR403 and VR404 for 0.36 ±0.02mV reading on VTVM.

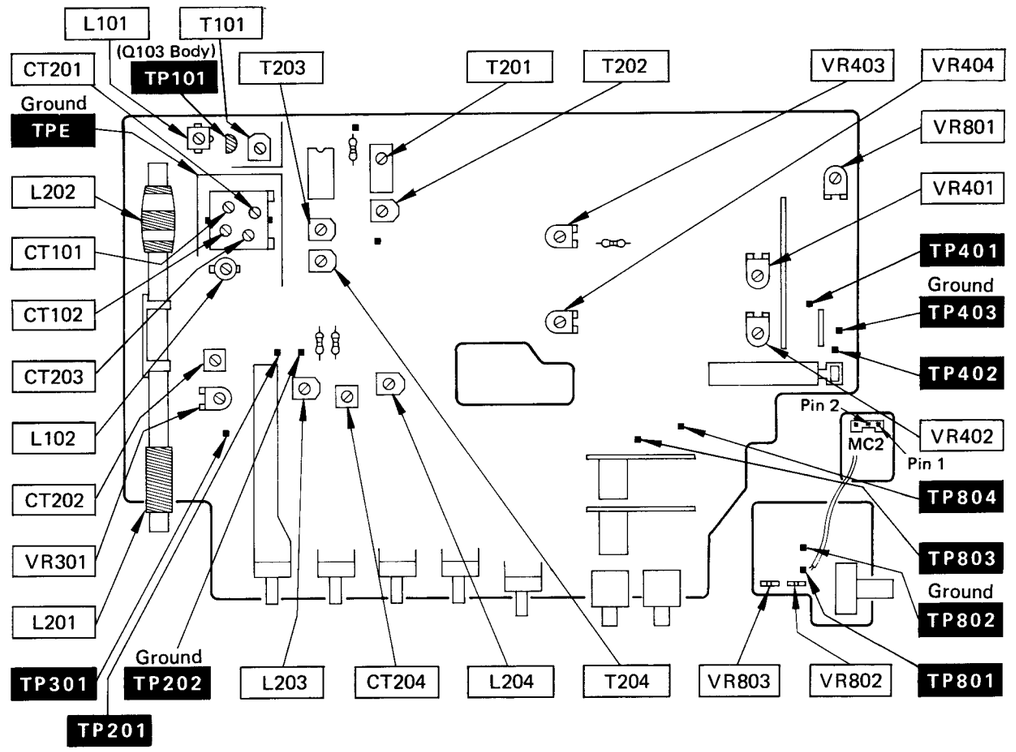
DIAL CORD STRINGING GUIDE

Note:
Dial Drum . . . . . Turn Fully Counterclockwise
Dial Cord Loop Length . . 111.8 cm





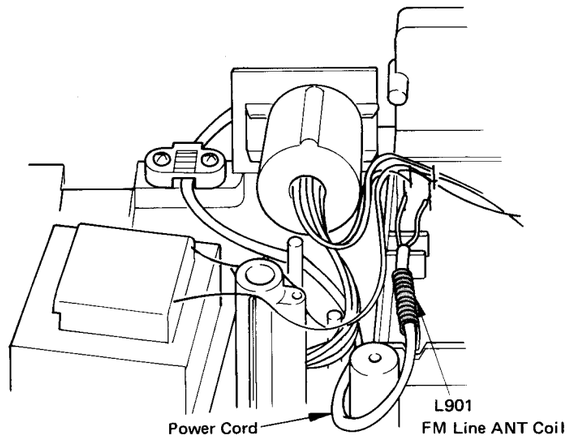
ALIGNMENT POINTS



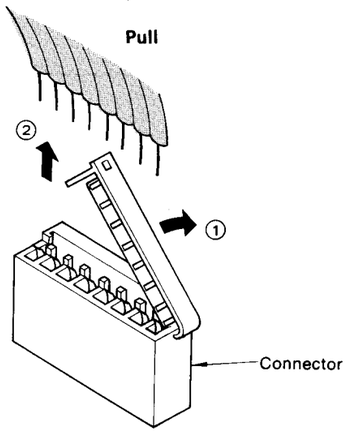
SERVICE AID

■ Disposition of FM Line Antenna

After servicing, please deal with
FM Line Antenna as Shown.

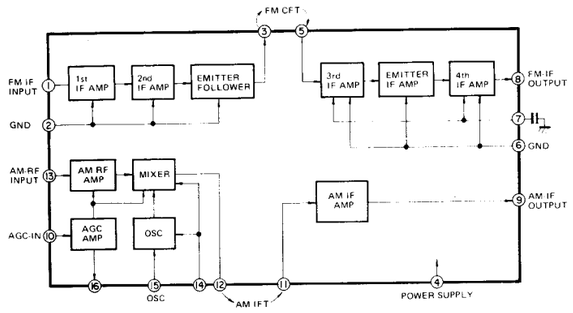


■ Disconnect of Flat Cable

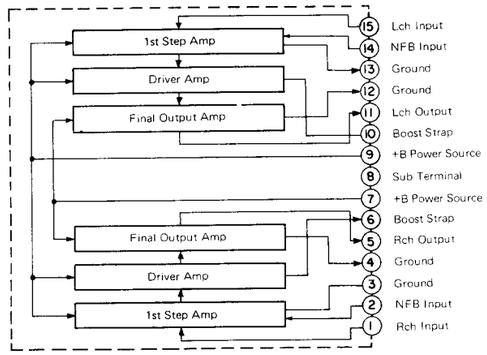


IC BLOCK DIAGRAM

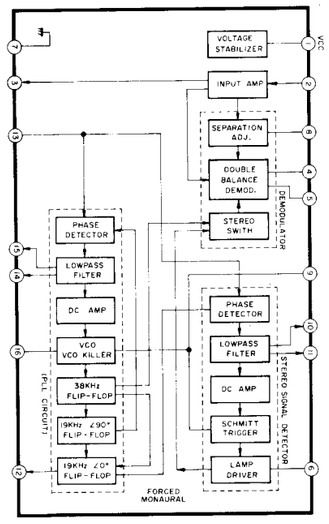
IC201 AN217P-BB



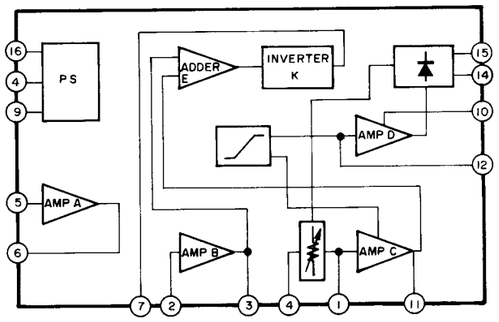
IC701 STK435-105



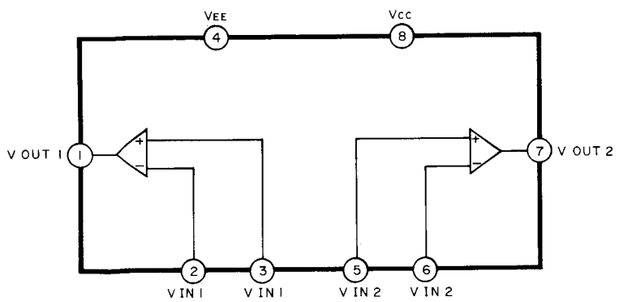
IC301 AN7410N



IC11N (R, L) NE646BN

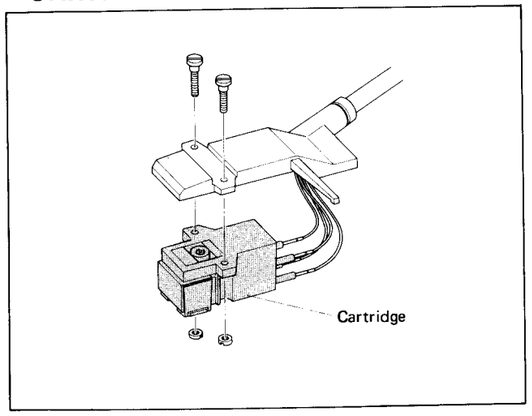


IC501 M5218L

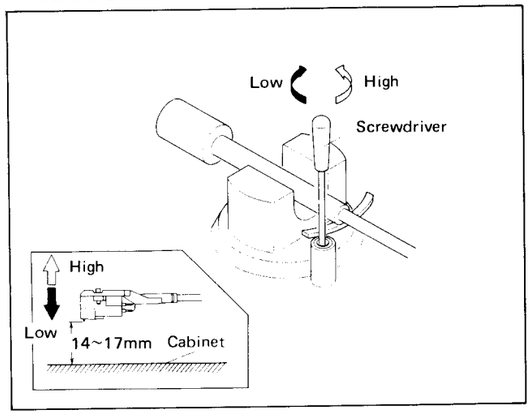


SERVICING THE RECORD PLAYER

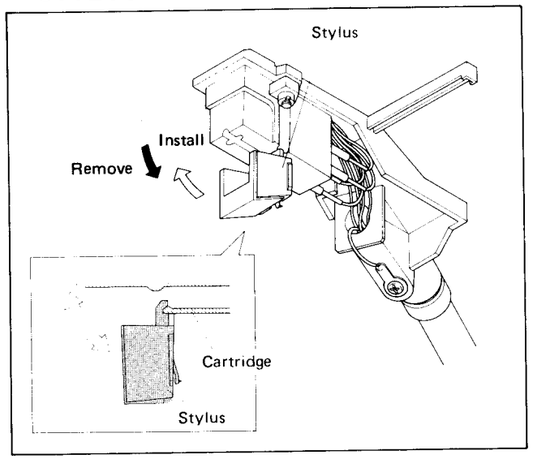
■ CARTRIDGE REPLACEMENT



■ TONE ARM LIFTING HEIGHT ADJUSTMENT

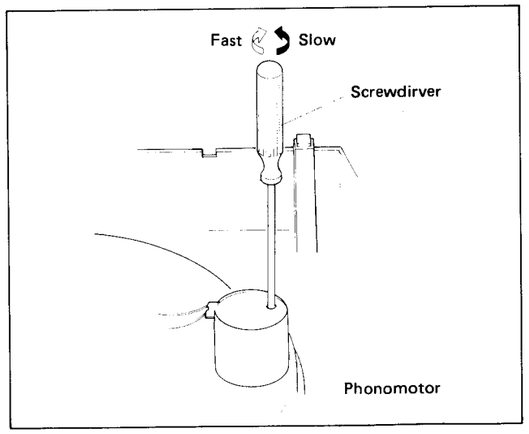


■ STYLUS REPLACEMENT

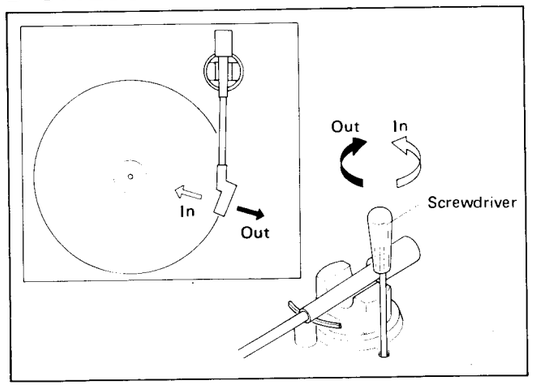


■ MOTOR SPEED ADJUSTMENT

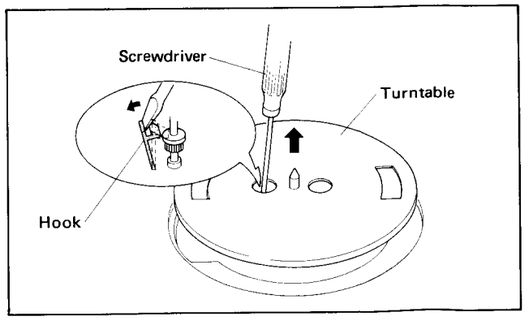
Adjust the screw when the turntable rotation going out of normal speed.



■ STYLUS DROP POINT ADJUSTMENT



■ TURNTABLE REPLACEMENT



REPLACEMENT PARTS LIST

NOTES:

1. Important safety notice
   Components identified by ⚠ mark have special characteristics important for safety. When replacing any of these components, use only manufacturer's specified parts.
2. Parts No. listed in this parts list are of service parts.

Ref. No.	Part No.	Description	Per Set (pcs.)
TRANSISTORS			
Q101	2SC1675	FM RF Amp.	1
Q102	2SC1675	FM OSC	1
Q103	2SC1674	FM MIX	1
Q201	2SC945L	Switching	1
Q202	2SC1684	Switching	1
Q203	2SA733	Switching	1
Q401, 402	2SC945L	Switching	2
Q403, 404	2SC945L	Rec. Amp.	2
Q501	2SC1843	Mic. Amp.	1
Q503, 504	2SC1843	PRE Amp.	2
Q701	2SC945L	Speaker Protector	1
Q801	2SC1383NC	Bias OSC	1
Q802	2SA720-S	Stabilizer	1
Q803	2SC1583	ALC	1
Q807, 808	2SC945L	ALC	2
Q809, 810	2SC945L	ALC Amp.	2
Q811, 812	2SC945L	ALC	2
Q815, 816	2SC945L	Switching	2
Q818	2SC945L	Switching	1
Q819, 820	2SC945L	Muting	2
Q821,	2SC945L	Muting	1
Q824	2SC945L	Muting	1
Q825, 826	2SK163	Switching	2
Q901	2SD1276LS	AOC	1
Q11T, 12T	2SC2405	Tape EQ	2
Q13T, 14T	2SC2405	Tape EQ	2
INTEGRATED CIRCUITS			
IC201	AN217P-BB	IF Amp.	1
IC301	AN7410N	FM MPX	1
IC501	M5218L	Headphone Amp.	1
IC701	STK435-105	Power Amp.	1
IC11N (R, L)	NE646BN	Dolby NR	2

Ref. No.	Part No.	Description	Per Set (pcs.)
DIODES			
D101, 102	MA162A	FM AGC	2
D103	MA345	FM AFC	1
D201	20A90	AM DET	1
D202	MA27A2	AOC	1
D203	20A90	RECT	1
D205~208	MA162A	Switching	4
D209, 210	20A90	FM DET	2
D211	SLP156B	Tuning IND	1
D212	MA162A	Muting	1
D301	SLP156B	Stereo IND	1
D401	SLP153B	REC IND	1
D801	MA162A	Switching	1
D803	MA162A	Switching	1
D806	LN224RP	Dial Pointer	1
D807~813	LN224RP	FUNC IND	7
D814~818	MA162A	Switching	5
D821, 822	MA162A	Muting	2
D825	DS135TD	RECT	1
D826	MA162A	Switching	1
D901~904	S3V20F	RECT	4
D905	RD16EB3	AOC	1
D906	DS135TD	Switching	1
D907	DS135TD	Switching	1
COILS AND TRANSFORMERS			
L101	SLD4N22-M	Collector Coil, FM	1
L102	SLD4N22-M	OSC Coil, FM	1
L103	RLQY15G5-0	RFC	1
L201, 202	SLF6E8-0	Ferrite ANT Coil	1
L203	SL02M16-M	OSC Coil, MW	1
L204	SL01M10-M	OSC Coil, LW	1
L206	SLQX250-Y	Choke Coil	1
L401, 402	ELQ393D599G	Bias Trap Coil	2
L403, 404	SLQU222-2Y	Rec. EQ Peak Coil	2
L501	SLQU270-4Y	Choke Coil	1
L801	SL09Z38-K	Bias OSC Coil	1
L901	SLQY40S-4	Line ANT Coil	1
L11N (R, L)	SLM9Z6-M	Filter	2
T1	SLT5M198V	Power	1
T101	RLI4M101	FM 1st IFT	1
T201	SL17W104-M	AM CFT	1
T202	RLI2M402	AM 2nd IFT	1
T203	RLI4M501	Disc Coil, FM	1
T204	RLI4M502	Disc Coil, FM	1
CF201, 202	SVF107MA53	FM CFT	2

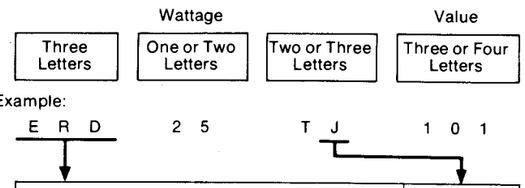
REPLACEMENT PARTS LIST

Ref. No.	Part No.	Description	Per Set (pcs.)
VARIABLE CAPACITORS			
CV101, 102 201, 202 (CT101, 102 201, 203)	RCV4RC2VK-M	Variable Capacitor with Trimmer	1
CT202, 204	SCVCTY115D	Trimmer	2
VARIABLE RESISTORS			
VR301	EVNM4AA00B14	19 kHz 10KΩB	1
VR401~404	EVNK6AA00B24	P.B. Rec. Level 20KΩB	4
VR501~504	EWCSMAF20A54	Bass, Treble 50KΩA	2
VR505, 506	EWCSNAF20B15	Main VR 100KΩB	1
VR507	EWHGFAF20G15	Balance 100KΩG	1
VR801	EVNK6AA00B53	Rec Bias Balance 5KΩB	1
VR802	EVNK0AA00B14	Rec Bias 10KΩB	1
VR803	EVNK0AA00B34	Erase Bias 30KΩB	1
THERMISTORS			
TH801	ERTD2FHK202S	Thermistor	1
TH802	BE471TS	Posistor	1
FUSES			
F901 ⚠	XBAS2C10T2A	Fuse 250V T1A	1
F902 ⚠	XBAS2C31T2A	Fuse 250V T3.15A	1
SWITCHES			
SF1~6	ESRM166F20A	Function	1
ST1~7	ESD80610	Rec/Play	1
S1 ⚠	ESE37205	Voltage Select	1
S401~403	ESB62268	Dolby, Tape Select	1
S801	SSS114-1	W.D.S	1
S901 ⚠	ESB822S	Power	1

Ref. No.	Part No.	Description	Per Set (pcs.)
COMPORNENT COMBINATIONS			
Z101	SXBFKB4	B.P.F	1
Z102	RXAF102P102S	C-R	1
Z201	EXAF203Z471	C-R	1
Z202	EXA5DL04C	C-R	1
Z501	RXAF332P152S	C-R	1
Z901, 902	RXAF103Z22E	C-C	1
PACKING			
PA1	SPN4990	Carton Box	1
PA2	SPN4992	Side Pad, Left	1
PA3	SPN4994	Side Pad, Right	1
PA4	XZB75X67C05	Set Cover	1
OTHERS			
1	SQX50448	Instruction Book (English, Deutsch, Français, Nederlands)	1
2	SQX50450	Instruction Book (English, Sumi, Svenska, Dansk)	1
LUBRICATING OIL			
1	WKC52	Oil-damped Cueing of Tone Arm Lifter	1

REPLACEMENT PARTS LIST

Numbering System of Resistor



Resistor Type	Tolerance
ERD: Carbon Film	F: ±1%
ERC: Solid	J: ±5%
ERX: Metal Film	K: ±10%
ERG: Metal Oxide Film	
ERO: Hi Stability Metal Film	
ERF: Flameproof Wire-Wound Bath-Tube	
ERQ: Fuse Type Metal Film	

Ref. No.	Part No.	Description (Unit: Ω)	Per Set (pcs.)
R101	ERD25FJ102	1k 1/4W	1
R102	ERD25FJ332	3.3k 1/4W	1
R103	ERD25FJ103	10k 1/4W	1
R104	ERD25FJ682	6.8k 1/4W	1
R105	ERD25FJ102	1k 1/4W	1
R106	ERD25TJ154	150k 1/4W	1
R107	ERD25FJ152	1.5k 1/4W	1
R108	ERD25FJ222	2.2k 1/4W	1
R109	ERD25TJ683	68k 1/4W	1
R110	ERD25FJ103	10k 1/4W	1
R112	ERD25FJ181	180 1/4W	1
R114	ERD25FJ331	330 1/4W	1
R115, 116	ERD25TJ224	220k 1/4W	2
R202	ERD25FJ101	100 1/4W	1
R203	ERD25FJ331	330 1/4W	1
R204	ERD25FJ470	47 1/4W	1
R205	ERD25FJ152	1.5k 1/4W	1
R206	ERD25FJ103	10k 1/4W	1
R207	ERD25FJ101	100 1/4W	1
R208	ERD25TJ333	33k 1/4W	1
R209	ERD25FJ682	6.8k 1/4W	1
R210	ERD25TJ474	470k 1/4W	1
R211	ERD25FJ472	4.7k 1/4W	1
R212	ERD25FJ182	1.8k 1/4W	1
R213	ERD25TJ563	56k 1/4W	1
R214	ERD25FJ681	680 1/4W	1
R215	ERD25TJ104	100k 1/4W	1
R216	ERD25TJ473	47k 1/4W	1
R217 ⚠	ERQ12HJ390P	39 1/2W	1
R218	ERD25FJ271	270 1/4W	1
R219	ERD25FJ182	1.8k 1/4W	1
R220	ERD25FJ472	4.7k 1/4W	1
R221, 222	ERD25FJ102	1k 1/4W	2
R223	ERD25TJ564	560k 1/4W	1
R224	ERD25TJ333	33k 1/4W	1
R225	ERD25TJ563	56k 1/4W	1
R226	ERD25TJ274	270k 1/4W	1
R227	ERD25TJ683	68k 1/4W	1
R229	ERD25FJ472	4.7k 1/4W	1
R230	ERD25FJ332	3.3k 1/4W	1
R231	ERD25FJ102	1k 1/4W	1
R234	ERD25TJ683	68k 1/4W	1
R235	ERD25FJ103	10k 1/4W	1
R301	ERD25TJ183	18k 1/4W	1
R302	ERD25FJ102	1k 1/4W	1
R303, 304	ERD25FJ472	4.7k 1/4W	2
R305	ERD25FJ222	2.2k 1/4W	1
R306, 307	ERD25TJ474	470k 1/4W	2
R308	ERD25TJ104	100k 1/4W	1
R309	ERD25FJ103	10k 1/4W	1
R310	ERD25FJ102	1k 1/4W	1
R311	ERD25FJ331	330 1/4W	1
R401, 402	ERD25FJ100	10 1/4W	2
R403, 404	ERD25FJ472	4.7k 1/4W	2
R405, 406	ERD25FJ332	3.3k 1/4W	2
R407, 408	ERD25TJ224	220k 1/4W	2
R409	ERD25TJ153	15k 1/4W	1
R410	ERD25FJ102	1k 1/4W	1
R413, 414	ERD25TJ564	560k 1/4W	2
R415, 416	ERD25FJ682	6.8k 1/4W	2
R417, 418	ERD25FJ222	2.2k 1/4W	2
R419, 420	ERD25FJ220	22 1/4W	2
R421, 422	ERD25FJ681	680 1/4W	2
R423, 424	ERD25FJ272	2.7k 1/4W	2
R425, 426	ERD25FJ102	1k 1/4W	2
R427, 428	ERD25FJ123	12k 1/4W	2
R429, 430	ERD25FJ103	10k 1/4W	2
R431, 432	ERD25FJ103	10k 1/4W	2
R433, 434	ERD25TJ105	1M 1/4W	2
R435, 436	ERD25TJ473	47k 1/4W	2
R437	ERD25FJ102	1k 1/4W	1
R501	ERD25FJ102	1k 1/4W	1
R502	ERD25TJ155	1.5M 1/4W	1
R503	ERD25FJ103	10k 1/4W	1
R504	ERD25FJ100	10 1/4W	1
R505	ERD25TJ104	100k 1/4W	1
R506	ERD25FJ102	1k 1/4W	1
R510, 511	ERD25TJ473	47k 1/4W	2
R512, 513	ERD25TJ275	2.7M 1/4W	2
R514, 515	ERD25FJ682	6.8k 1/4W	2
R516, 517	ERD25FJ151	150 1/4W	2
R518, 519	ERD25TJ223	22k 1/4W	2
R520, 521	ERD25TJ683	68k 1/4W	2
R522, 523	ERD25FJ222	2.2k 1/4W	2
R524, 525	ERD25FJ222	2.2k 1/4W	2
R526, 527	ERD25FJ103	10k 1/4W	2
R528, 529	ERD25TJ274	270k 1/4W	2
R530, 531	ERD25FJ472	4.7k 1/4W	2

REPLACEMENT PARTS LIST

Ref. No.	Part No.	Description (Unit: Ω)	Per Set (pcs.)
R532, 533	ERD25TJ473	47k 1/4W	2
R534, 535	ERD25FJ102	1k 1/4W	2
R536, 537	ERD25FJ560	56 1/4W	2
R538, 539	ERD25FJ103	10k 1/4W	2
R540, 541	ERD25TJ473	47k 1/4W	2
R542, 543	ERD25FJ103	10k 1/4W	2
R544, 545	ERD25TJ563	56k 1/4W	2
R547	ERD25FJ152	1.5k 1/4W	1
R601, 602	ERD25TJ225	2.2M 1/4W	2
R603, 604	ERD25TJ564	560k 1/4W	2
R701, 702	ERD25FJ102	1k 1/4W	2
R703, 704	ERD25TJ224	220k 1/4W	2
R705, 706	ERD25FJ221	220 1/4W	2
R707, 708	ERD25TJ473	47k 1/4W	2
R709, 710	ERD25TJ394	390k 1/4W	2
R711	ERD25TJ104	100k 1/4W	1
R712 ⚠	ERQ12HJ101	100 1/2W	1
R713, 714 ⚠	ERD2FCG100P	10 2W	2
R715, 716	ERD25TJ274	270k 1/4W	2
R717, 718	ERD25TJ683	68k 1/4W	2
R719	ERD25FJ102	1k 1/4W	1
R801	ERD25FJ1R0	1 1/4W	1
R802	ERD25TJ334	330k 1/4W	1
R803	ERD25TJ224	220k 1/4W	1
R804	ERD25FJ6R8	6.8 1/4W	1
R805 ⚠	ERD2FCJ4R7	4.7 2W	1
R806	ERD25FJ222	2.2k 1/4W	1
R807, 808	ERD25TJ153	15k 1/4W	2
R809	ERD25TJ183	18k 1/4W	1
R810	ERD25TJ123	12k 1/4W	1
R811	ERD25FJ222	2.2k 1/4W	1
R812	ERD25FJ122	1.2k 1/4W	1
R813	ERD25FJ472	4.7k 1/4W	1
R818 ⚠	ERQ12HJ470	47 1/2W	1
R819, 820	ERD25FJ102	1k 1/4W	2
R821, 822	ERD25TJ473	47k 1/4W	2
R823, 824	ERD25FJ472	4.7k 1/4W	2
R827	ERD25TJ223	22k 1/4W	1
R828	ERD25TJ153	15k 1/4W	1
R829, 830	ERD25FJ103	10k 1/4W	2
R831, 832	ERD25TJ104	100k 1/4W	2
R833, 834	ERD25FJ222	2.2k 1/4W	2
R835, 836	ERD25FJ102	1k 1/4W	2
R837, 838	ERD25TJ473	47k 1/4W	2
R839	ERD25TJ473	47k 1/4W	1
R845 ⚠	ERQ12HJ100P	10 1/2W	1
R847	ERD25TJ223	22k 1/4W	1
R849	ERD25FJ102	1k 1/4W	1
R851	ERD25TJ223	22k 1/4W	1
R852	ERD25TJ683	68k 1/4W	1
R853	ERD25FJ103	10k 1/4W	1
R854	ERD25TJ563	56k 1/4W	1
R855	ERD25FJ472	4.7k 1/4W	1
R856	ERD25FJ103	10k 1/4W	1
R858	ERD25FJ472	4.7k 1/4W	1
R859	ERD25FJ472	4.7k 1/4W	1
R860	ERD25TJ473	47k 1/4W	1
R861	ERD25FJ272	2.7k 1/4W	1
R862, 863	ERD25TJ223	22k 1/4W	2
R864, 865	ERD25FJ103	10k 1/4W	2
R866, 867	ERD25TJ684	680k 1/4W	2
R868	ERD25FJ682	6.8k 1/4W	1
R869	ERD25FJ472	4.7k 1/4W	1
R871	ERD25TJ223	22k 1/4W	1
R872	ERD25FJ472	4.7k 1/4W	1
R873	ERD25FJ470	47 1/4W	1
R874	ERD25TJ823	82k 1/4W	1
R875	ERD25FJ472	4.7k 1/4W	1
R876	ERD25TJ153	15k 1/4W	1
R877	ERD25TJ333	33k 1/4W	1
R879, 880	ERD25TJ473	47k 1/4W	2
R882	ERD25FJ103	10k 1/4W	1
R883	ERD25TJ223	22k 1/4W	1
R885	ERQ12HJ220	22 1/2W	1
R886	ERD25TJ153	15k 1/4W	1
R887	ERD25FJ332	3.3k 1/4W	1
R888	ERD25FJ103	10k 1/4W	1
R889, 890	ERD25FJ682	6.8k 1/4W	2
R891	ERD25FJ682	6.8k 1/4W	1
R892	ERD25FJ103	10k 1/4W	1
R893	ERD25FJ102	1k 1/4W	1
R894	ERD25TJ333	33k 1/4W	1
R901	ERD25FJ472	4.7k 1/4W	1
R902	ERD25FJ471	470 1/4W	1
R903	ERQ12HJ2R2	2.2 1/2W	1
R11N (R, L)	RRD18XK102	1k 1/8W	2
R12N (R, L)	RRD18XJ332	3.3k 1/8W	2
R13N (R, L)	RRD18XJ473	47k 1/8W	2
R14N (R, L)	RRD18XK181	180 1/8W	2
R15N (R, L)	RRD18XK224	220k 1/8W	2
R16N (R, L)	RRD18XJ274	270k 1/8W	2
R17N (R, L)	RRD18XK102	1k 1/8W	2
R18N (R, L)	RRD18XK102	1k 1/8W	2
R11T, 12T	ERD25TJ104	0.1M 1/4W	2
R13T, 14T	RRD18XK101	100 1/8W	2
R15T, 16T	ERD18XJ103	10k 1/8W	2
R17T, 18T	RRD18XK102	1k 1/8W	2
R19T, 20T	RRD18XK224	220k 1/8W	2
R21T, 22T	RRD18XK224	220k 1/8W	2
R23T, 24T	RRD18XK822	8.2k 1/8W	2
R25T	RRD18XJ333	33k 1/8W	1

CIRCUIT BOARD AND WIRING CONNE

P8

D401
REC IND.

To TAPE MOTOR SWITCH - [C]

P2

P11

To ERASE HEAD - [A]

To PHONO MOTOR - [B]

Q811 Q812	
C	14.7V
B	0V
E	0V

Q808	
C	0V
B	0.7V
E	0V

Q801	NOMAL	CrO2	METAL
C	9.3V	10.4V	13.0V
B	0.7V	0.7V	0.8V
E	0.2V	0.2V	0.3V

S801
WHISTLE DEFEAT
SWITCH

Q815 Q816	
C	0V
B	0V
E	0V

Q802	
C	NOMAL 9.4V / CrO2 10.5V / METAL 13.1V
B	14.0V
E	14.7V

Q403 Q404	
C	7.0V
B	2.9V
E	2.3V

CASSETTE
MOTOR

S3
TAPE MOTOR
SWITCH

To PI-[C]

S4
TAPE PLAY
SWITCH

To PI2-(A)

To TONE ARM

To TONE ARM

To P3-(B)

S2
PHO
SWIT

To PI-[

IC201

	1	2	3	4	5	6	7	8
FM	0.8V	0V	3.7V	8.4V	1.1V	0V	1.1V	8.4
AM	0.8V	0V	3.1V	7.0V	2.5V	0V	2.2V	1.8

P1

ST-1~7
REC/PLAY
SELECTOR
SWITCH

To R/P HEAD - [D]

GND

TAPE EQ

L CH DOLBY

R CH DOLBY

MIC

HEADPHONES

FW7A

FW9A

FW11A

FW11B

MC4

MC6

MC5

Q401 Q402	
C	0V
B	0V
E	0V

Q803	
C	—
B	0V
E	0V

Q807	
C	14.7V
B	0V
E	0V

Q810 Q809	
C	5.7V
B	4.7V
E	4.1V

Q13T Q14T	
C	6.4V
B	1.2V
E	0.7V

Q11T Q12T	
C	1.2V
B	0.6V
E	0V

Q501	
C	3.4V
B	0.6V
E	0V

Q819	
C	0V
B	0.6V
E	0V

P4

S401~403
TAPE
SELECTOR
SWITCH

To PI-(C)

To PI-(D)

VR505,506
VOLUME
CONTROL

To PI2-(E)

VR507
BALANCE
CONTROL

VR501,502
BASS
CONTROL

VR503,504
TREBLE
CONTROL

Q821 Q822	
C	0V
B	0.2V
E	0V

Q503 Q504	
C	11.7V
B	0.9V
E	0.3V

IC501

1	2	3	4	5	6	7	8
7.4V	7.4V	7.3V	0V	7.3V	7.4V	7.4V	14.7V

IC11N

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
4.3V	6.5V	6.9V	6.4V	6.4V	6.6V	6.0V	0V	0V	6.5V	6.6V	6.5V	0V	6.5V	6.4V	12.7V

D806
DIAL POINTER
IND.

P7

*This diagram might be modified without notice for further development of technology.

ONNECTION MODEL SG-V04

	7	8	9	10	11	12	13	14	15	16
V	1.1V	8.4V	1.0V	0.8V	0V	1.1V	0.6V	3.7V	0.8V	0.6V
V	2.2V	1.8V	8.5V	1.4V	0V	0.8V	0.7V	1.5V	1.4V	0.7V

TOR

C

To PI-B

PHONO MOTOR

S2 PHONO MOTOR SWITCH

Q825 Q826	
S	1.7V
G	0V
D	12.8V

Q103	
C	12.0V
B	1.4V
E	0.7V

Q101	
C	10.9V
B	3.2V
E	2.5V

P6

C201
C202

R/P HEAD

To PI-D

LINE ANT

P12

Q701	
C	20.9V
B	0V
E	0V

IC701	
1	4.8V
2	4.3V
3	0V
4	0V
5	16.6V
6	4.0V
7	30.2V
8	0V
9	29.2V
10	4.0V
11	16.6V
12	0V
13	0V
14	4.3V
15	4.8V

To PI-A

To PI-E

Q824	
C	0.3V
B	0.8V
E	0.2V

Q201	
C	0V
B	0.3V
E	0V

Q102	
C	3.9V
B	1.5V
E	1.2V

IC301	STEREO	MONO
1	8.8V	8.8V
2	1.4V	1.4V
3	1.4V	1.4V
4	2.3V	2.3V
5	2.3V	2.3V
6	0.7V	0V
7	0V	0V
8	0.3V	0.3V
9	0.7V	0.6V
10	1.3V	1.3V
11	1.3V	1.3V
12	1.1V	1.1V
13	1.3V	1.3V
14	1.3V	1.3V
15	1.3V	1.3V
16	1.7V	1.7V

Q901	
C	29.8V
B	16.1V
E	14.8V

Q202	
C	14.4V
B	0.5V
E	0V

Q203	
C	1.0V
B	14.1V
E	14.7V

Q818	
C	0V
B	0.7V
E	0V

ERASE HEAD

To PII-A

SF 1~6 FUNCTION SELECTOR SWITCH

To PI-B

503,504 REBLE ONTROL

P7

P3

P5

D807~813 FUNCTION IND.

D211 TUNING IND.

D301 FM STEREO IND.

S901 POWER SWITCH

L901

AC CORD

SECONDARY

POWER TRANSFORMER

PRIMARY

BLUE

BLUE

SI VOLTAGE SELECTOR SWITCH	
1	BLUE
2	ORANGE
3	BROWN
4	RED
5	GRAY
6	WHITE
7	BLACK
8	

SG-V04

SCHEMATIC DIAGRAM

FM RF AMP	FM OSC	FM AGC	FM MIX	TUNING IND	STEREO IND	FM DET	FM MPX	SWITCHING		MUTING	RECT	MIC AMP
Q101	Q102	D101,102	Q103	D211	D301	D209,210	IC301	Q202	2SC1684	Q819	D827	Q501
2SC1675	2SC1675	MA150	2SC1674	SLP256B	SLP156B	20A90	AN7410N	Q203	2SA733	2SC945L	MA150	2SC1843
								Q825,826	2SK163			

FM AFC
D103
MA345

MUTING
D212
MA150

IF AMP
IC201
AN217P-BB

AOC
D202
MA27A2

RECT
D203
0A90

AM DET
D201
0A90

SWITCHING
Q201
2SC945L
D205~208
MA150

SWITCHING
Q401,402
2SC945L

STABILIZER
Q802
2SA720

BIAS OSC
Q801
2SC1383NC

SXPTC2-1
TAPE EQ

SXPTN4(19/38KHz Filter)
DOLBY NR

SXPTN4(19/38KHz Filter)
DOLBY NR

SWITCHING
D816,817
MA150

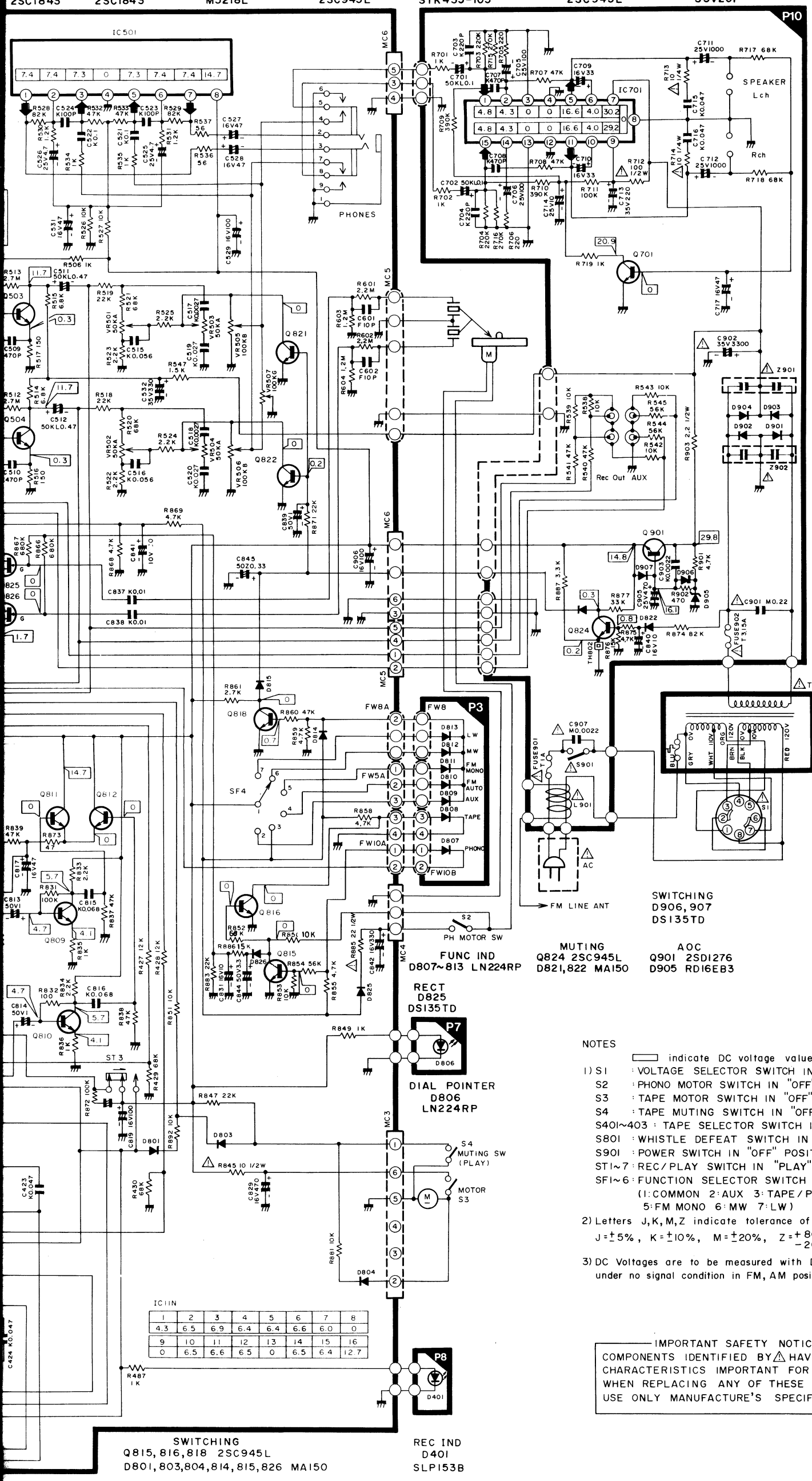
REC AMP
Q403,404
2SC945L

ALC
Q803,807,808,811,812
2SC945L

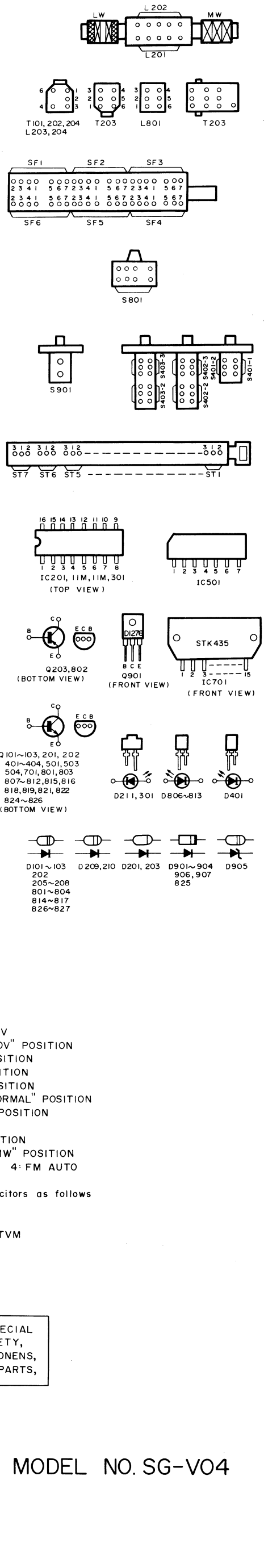
*This diagram might be modified without notice for further development of technology.

MODEL SG-V04

MIC AMP	PRE AMP	HEADPHONE AMP	MUTING	POWER AMP	SPEAKER PROTECTOR	RECT
Q501	Q503,504	IC501	Q821,822	IC701	Q701	D901~904
2SC1843	2SC1843	M5218L	2SC945L	STK435-105	2SC945L	S3V20F



TERMINAL GUIDE



NOTES

indicate DC voltage values in V

1) S1 : VOLTAGE SELECTOR SWITCH IN "220V" POSITION
   S2 : PHONO MOTOR SWITCH IN "OFF" POSITION
   S3 : TAPE MOTOR SWITCH IN "OFF" POSITION
   S4 : TAPE MUTING SWITCH IN "OFF" POSITION
   S401~403 : TAPE SELECTOR SWITCH IN "NORMAL" POSITION
   S801 : WHISTLE DEFEAT SWITCH IN "C" POSITION
   S901 : POWER SWITCH IN "OFF" POSITION
   ST1~7 : REC/PLAY SWITCH IN "PLAY" POSITION
   SF1~6 : FUNCTION SELECTOR SWITCH IN "MW" POSITION
   (1: COMMON 2: AUX 3: TAPE/PHONO 4: FM AUTO 5: FM MONO 6: MW 7: LW)
2) Letters J, K, M, Z indicate tolerance of capacitors as follows
   J = ±5%, K = ±10%, M = ±20%, Z = +80% −20%
3) DC Voltages are to be measured with DC VTVM under no signal condition in FM, AM position

IMPORTANT SAFETY NOTICE

COMPONENTS IDENTIFIED BY ⚠ HAVE SPECIAL CHARACTERISTICS IMPORTANT FOR SAFETY, WHEN REPLACING ANY OF THESE COMPONENS, USE ONLY MANUFACTURE'S SPECIFIED PARTS,

SCHEMATIC DIAGRAM MODEL NO. SG-V04

REPLACEMENT PARTS LIST

Numbering System of Capacitor

Type	Voltage	Value	Tolerance
Four Letters	One or Two Letters	Two to Five Letters	One or Two Letters

Example:

E C K H — 1 H — 3 3 3 — M D

Capacitor Type		Tolerance	
ECCD:	Temperature Compensating Ceramic	C:	±0.25pF
ECKD:	High Dielectric Constant Ceramic	D:	±0.5pF
ECQM:	Polyester	F:	±1pF
ECQP:	Polypropylene	J:	±5%
ECET:	Electrolytic	K:	±10%
ECFD:	Semiconductor Ceramic	M:	±20%
ECEA:	Electrolytic	Z:	+80, −20%

Ref. No.	Part No.	Description (Unit: μ)		Per Set (pcs.)
C1	ECKD1H223ZF	0.022	50V	1
C102	ECFD1V223KD	0.022	35V	1
C103	ECKD1H102KB	0.001	50V	1
C104	ECKD1H223ZF	0.022	50V	1
C105	ECFD1V223KD	0.022	35V	1
C106	ECKD1H102KB	0.001	50V	1
C107	ECCD1H220KC	22pF	50V	1
C108	ECCD1H180KC	18pF	50V	1
C109	ECCD1H100KC	10pF	50V	1
C110	ECCD1H010CC	1pF	50V	1
C111	ECCD1H220KS	22pF	50V	1
C112	ECCD1H080CC	8pF	50V	1
C113	ECKD1H223ZF	0.022	50V	1
C114	ECFD1V223KD	0.022	35V	1
C115	ECKD1H181KB	180pF	50V	1
C116	ECCD1H220K	22pF	50V	1
C117	ECCD1H020CC	2pF	50V	1
C118	ECCD1H070CC	7pF	50V	1
C120	ECKD1H223ZF	0.022	50V	1
C201	ECKD1H151KB	150pF	50V	1
C202	ECKD1H101KB	100pF	50V	1
C203	ECCD1H050KC	5pF	50V	1
C206	ECFD1V473KD	0.047	35V	1
C207	ECCD1H180KC	18pF	50V	1
C208	ECCD1H100KC	10pF	50V	1
C209	ECQP1391JZ	390pF	100V	1
C210	ECQP1181JZ	180pF	100V	1
C211	ECFD1V103KD	0.01	35V	1
C212	ECCD1H680K	68pF	50V	1
C214	ECEA1CS330	33	16V	1
C215	ECCD1H330K	33pF	50V	1
C216	ECEA1CS330	33	16V	1
C217	ECEA50ZR22	0.22	50V	1
C219	ECEA1HS100	10	50V	1

Ref. No.	Part No.	Description (Unit: μ)		Per Set (pcs.)
C221	ECEA50Z1	1	50V	1
C222	ECKD1H103ZF	0.01	50V	1
C224, 225	ECKD1H223ZF	0.022	50V	2
C226	ECKD1H103ZF	0.01	50V	1
C227	ECKD1H223ZF	0.022	50V	1
C228	ECKD1H181KB	180pF	50V	1
C229	ECCD1H050KC	5pF	50V	1
C230	ECKDH181KB	180pF	50V	1
C231	ECEA25Z4R7	4.7	25V	1
C232	ECEA1HS100	10	50V	1
C234	ECEA1ES101	100	25V	1
C237	ECKD1H102KB	0.001	50V	1
C238	ECKD1H223ZF	0.022	50V	1
C301	ECQP1471JZ	470pF	100V	1
C302	ECFD1V473KD	0.047	35V	1
C303	ECEA50ZR47	0.47	50V	1
C304	ECEA50ZR22	0.22	50V	1
C305	ECEA50Z1	1	50V	1
C306, 307	ECFD1V103KD	0.01	35V	2
C308, 309	ECFD1H332KD	0.0033	50V	2
C310, 311	ECEA50Z1	1	50V	2
C312	ECEA50ZR47	0.47	50V	1
C313	ECEA1AS221	220	10V	1
C401, 402	ECKD1H681KB	680pF	50V	2
C403, 404	ECKD1H561KB	560pF	50V	2
C405, 406	ECFD1H472KD	0.0047	50V	2
C407, 408	ECFD1V103KD	0.01	35V	2
C411, 412	ECEA50Z1	1	50V	2
C413, 414	ECEA50ZR47	0.47	50V	2
C415, 416	ECQM1H563JZ	0.056	50V	2
C417, 418	ECEA50Z1	1	50V	2
C419, 420	ECEA1HS100	10	50V	2
C421, 422	ECFD1V473KD	0.047	35V	2
C423, 424	ECFD1V473KD	0.047	35V	2
C425	ECEA1ES470	47	25V	1
C501	ECEA50M1	1	50V	1
C502	ECKD1H102KB	0.001	50V	1
C503	ECEA50Z1	1	50V	1
C504	ECEA1CS221	220	16V	1
C507, 508	ECEA50ZR47	0.47	50V	2
C509, 510	ECKD1H471KB	470pF	50V	2
C511, 512	ECEA1HKLR47	0.47	50V	2
C515, 516	ECQM1H563JZ	0.056	50V	2
C517, 518	ECFD1H272KD	0.0027	50V	2
C519, 520	ECFD1V273KD	0.027	35V	2
C521, 522	ECQM1H104KV	0.1	50V	2
C523, 524	ECKD1H101KB	100pF	50V	2
C525, 526	ECEA25Z4R7	4.7	25V	2
C527, 528	ECEA1ES470	47	25V	2
C529	ECEA1ES101	100	25V	1
C531	ECEA1ES101	100	25V	1
C532	ECEA1VS331	330	35V	1
C601, 602	ECCD1H050KC	5pF	50V	2

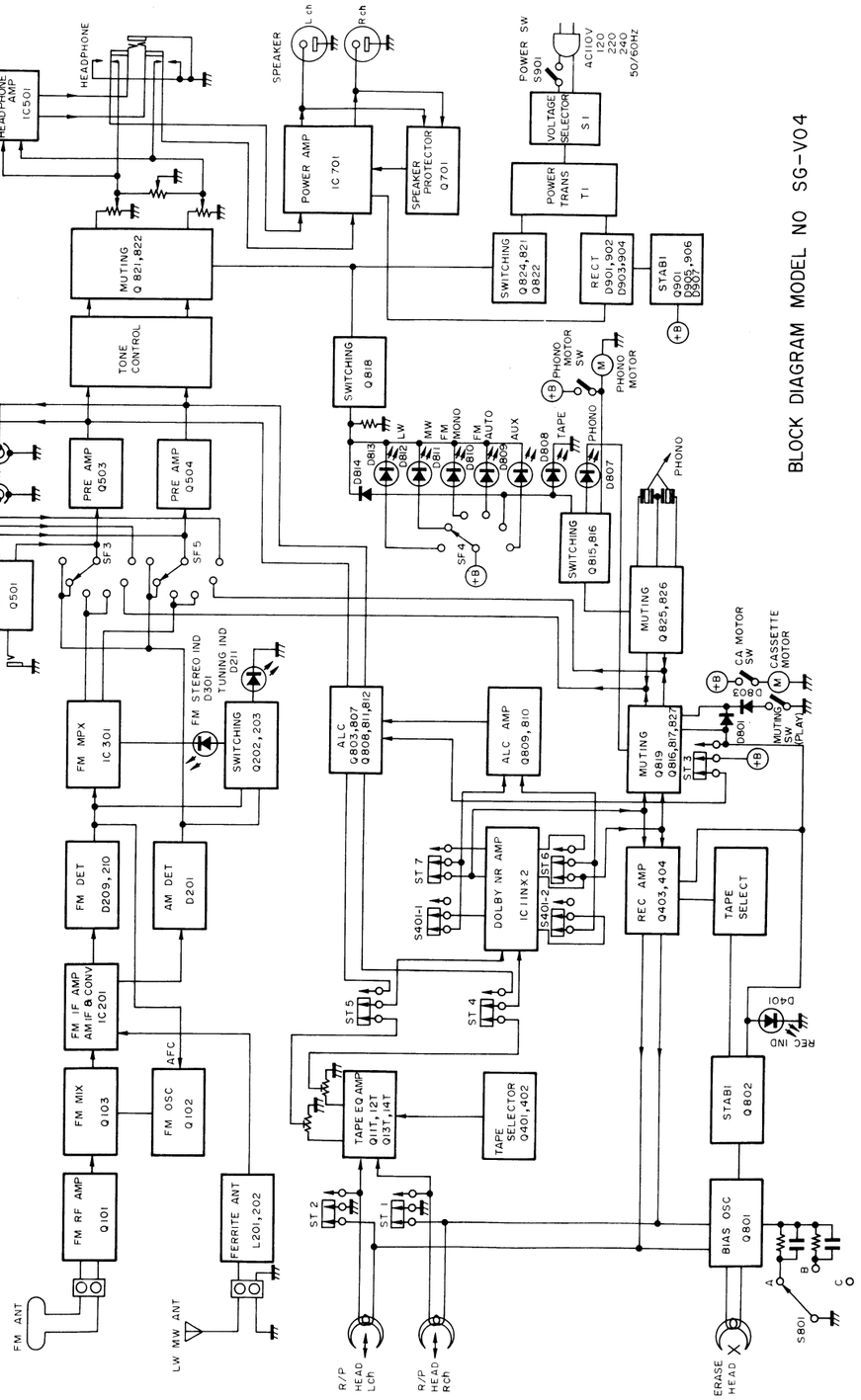
REPLACEMENT PARTS LIST

Ref. No.	Part No.	Description (Unit: μ)		Per Set (pcs.)
C701, 702	ECEA50MR1	0.1	50V	2
C703, 704	ECKD1H221KB	220pF	50V	2
C705, 706	ECEA1ES101	100	25V	2
C707, 708	ECKD1H471KB	470pF	50V	2
C709, 710	ECEA1CS330	33	16V	2
C711, 712	ECEA1VS102	1000	35V	2
C713	ECEA1VS221	220	35V	1
C714	ECEA1HS100	10	50V	1
C715, 716	ECFD1V473KD	0.047	35V	2
C717	ECEA1AS470	47	10V	1
C801, 802	ECKD1H331KB	330pF	50V	2
C803	ECQP1681JZ	680pF	100V	1
C804	ECQP1152JZ	1500pF	100V	1
C805	ECQP1472JZ	4700pF	100V	1
C806	ECQM1H123JZ	0.012	50V	1
C807	ECQM1H683JZ	0.068	50V	1
C808	ECEA1ES470	47	25V	1
C809	ECEA1AS101	100	10V	1
C810	ECEA1ES101	100	25V	1
C813, 814	ECEA50Z1	1	50V	2
C815, 816	ECQM1H683JZ	0.068	50V	2
C817	ECEA1ES470	47	25V	1
C818	ECEA50Z1	1	50V	1
C819	ECEA1ES101	100	25V	1
C829	ECEA1CS471	470	16V	1
C831	ECEA1HS100	10	50V	1
C832	ECEA1ES220	22	25V	1
C833, 834	ECEA50Z1	1	50V	2
C835, 836	ECEA50ZR22	0.22	50V	2
C837, 838	ECFD1H182KD	0.0018	50V	2
C839	ECKD1H222KB	0.0022	50V	1
C840	ECEA1HS100	10	50V	1
C841	ECEA1AS101	100	10V	1
C842	ECEA1CS331	330	16V	1
C843	ECQP1152JZ	1500pF	100V	1
C844	ECEA1JS330	33	63V	1
C845	ECEA50ZR68	0.68	50V	1
C901 ⚠	ECQM1224MZ	0.22	100V	1
C902	ECET35R332SW	3300	35V	1
C903	ECFD1H222KD	0.0022	50V	1
C905	ECEA1ES471	470	25V	1
C906	ECEA1ES101	100	25V	1
C907	ECKDKC222MF	0.0022	400V	1
C11N (R, L)	ECEA50M1R	1	50V	2
C12N (R, L)	ECEA1HS100	10	50V	2
C13N (R, L)	ECEA1HS100	10	50V	2
C14N (R, L)	ECQM1H472JZ	0.0047	50V	2
C15N (R, L)	ECEA1HS100	10	50V	2
C16N (R, L)	ECQM1H562JZ	0.0056	50V	2
C17N (R, L)	ECEA50MR1R	0.1	50V	2
C18N (R, L)	ECEA50MR33R	0.33	50V	2
C19N (R, L)	ECQM1H273JZ	0.027	50V	2
C20N (R, L)	ECFD1V473KD	0.047	35V	2

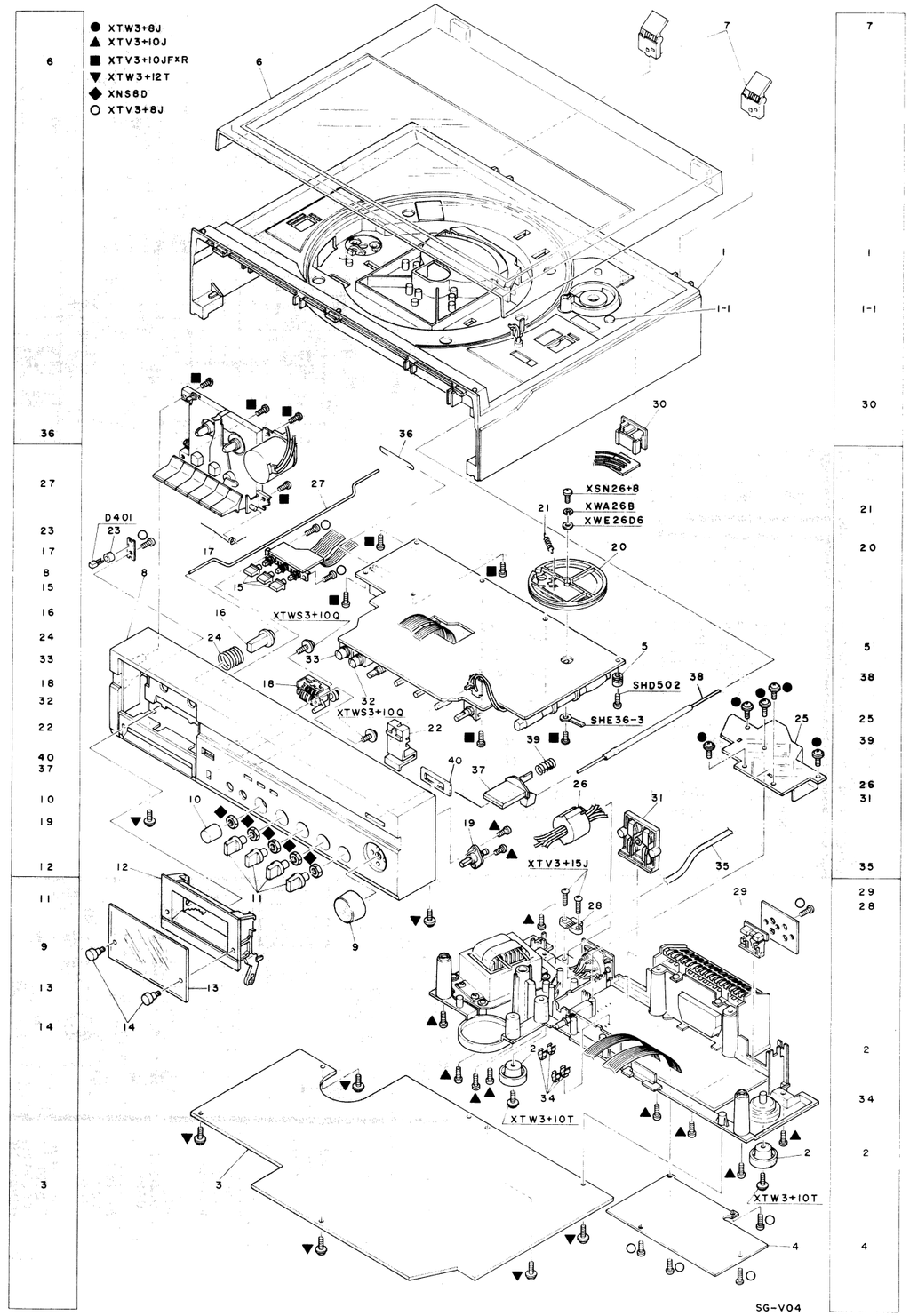
Ref. No.	Part No.	Description (Unit: μ)		Per Set (pcs.)
C21N (R, L)	ECEA1HS100	10	50V	2
C22N (R, L)	ECEA1AS221	220	10V	2
C11T, 12T	ECEA25M4R7R	4.7	25V	2
C13T, 14T	ECUX1H102MD	0.001	50V	2
C17T, 18T	ECEA1HS100	10	50V	2
C19T, 20T	ECEA1HS100	10	50V	2
C21T, 22T	ECUX1H153MD	0.015	50V	2
C23T	ECEA1AS221	220	10V	1

BLOCK DIAGRAM

BLOCK DIAGRAM MODEL NO SG-V04



PARTS LOCATION OF CABINET AND CHASSIS



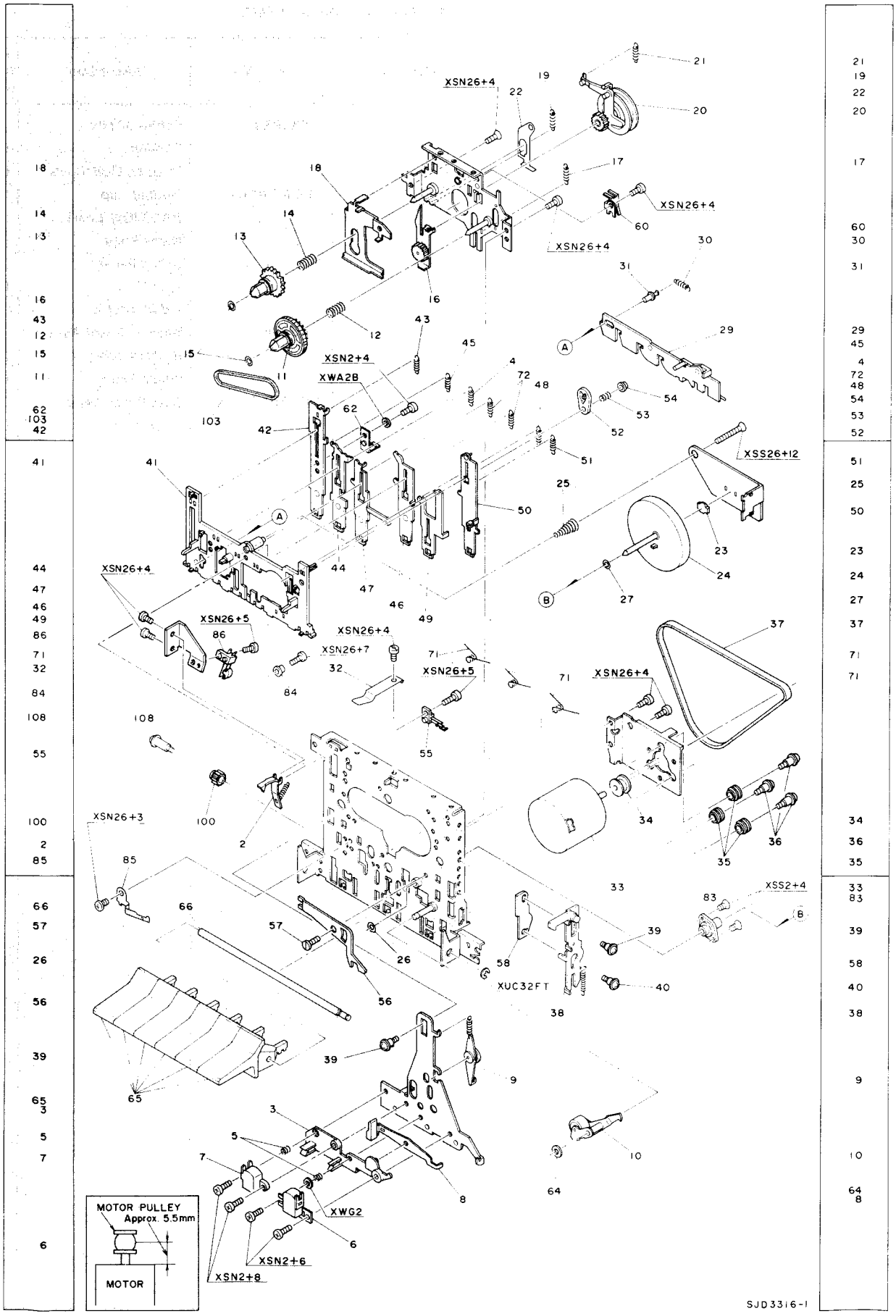
REPLACEMENT PARTS LIST OF CABINET AND CHASSIS

Ref. No.		Part No.	Description	Per Set (pcs.)
1		SYK1980	Cabinet Ass'y	1
1-1		SFGK170-01	Rubber, Cap	1
2		SYL14-1	Inshulator	2
3		SYU 476	Bottom Board Ass'y	1
4		SKE398	Bottom Cabinet Cover	1
5		SHG9092	Rubber	1
6		SYE920	Dust Cover Ass'y	1
7		SBH9120	Hinge	2
8		SYP660	Front Panel Ass'y	1
9		SBN1002-2	Knob, Tuning	1
10		SBN1032-2	Knob, Volume	1
11		SBN1078	Knob, Selector	4
12		SYE368	Cassette Holder Ass'y	1
13		SGE1472	Cassette Lid	1
14		SNE284-1	Screw, Cassette Lid	2
15		SBC452-3	Button, Push	3
16		SBC434-1	Button, Power	1
17		SMQ4094	Spring, Cassette Lid	1
18		SMQ3768	Tape Counter	1
19		SDT92402	Shaft, Tuning	1
20		SDD80-6	Dial Drum	1
21		RDS4170A	Spring, Dial Drum	1
22		SDA96	Holder, Dial Pointer	1
23		SJY5162	Spacer, LED	1
24		SUS296	Spring, Power Button	1
25		SUV248	Cover, Power	1
26		SUV172	Cover, Voltage Selector Switch	1
27		SUH120	Remote Rod, Power	1
28	⚠	SHR134	Cord Clamper	1
29		SJF3418	Terminal, AUX	1
30		SJS9408	Terminal, ANT	1
31		SJF9422	Terminal, Speaker	1
32		XCJS6PF10	Jack, Headphone	1
33		XCJS6PD2	Jack, Mic	1
34	⚠	SJF110	Holder, Fuse	4
35	⚠	SJA138	AC Power Cord	1
36		SMQ4546	Rec Spoke	1
37		SJY456	Button, Start	1
38		SJY90226	Start Rod, Player	1
39		SUS430	Spring, Start Button	1
40		SHG678	Rubber Sheet	1

■ **Items of Assembly Parts**

Ref. No.	Part No.	Description	Per Set (pcs.)
1	**SYK1980**	**Cabinet Ass'y**	**1**
		Cabinet	(1)
		Rubber, Dust Cover	(3)
1-1	SFGK170-01	Rubber Cap	(1)
		CAUTION Label	(1)
		Name Plate	(1)
		Shield Paper	(1)
		Arm Rest	(1)
		Label, Stylus	(1)
3	**SYU476**	**Bottom Board Ass'y**	**1**
		Bottom Board	(1)
		Shield Paper	(1)
6	**SYE920**	**Dust Cover Ass'y**	**1**
		Dust Cover	(1)
		Badge	(1)
8	**SYP660**	**Front Panel Ass'y**	**1**
		Front Panel	(1)
		Tinted Glass A	(1)
		Tinted Glass B	(1)
		Felt, Foot	(2)
12	**SYE368**	**Cassette Holder Ass'y**	**1**
		Cassette Ornament	(1)
		Cassette Holder	(1)
		Spring, Cassette Clamper	(2)

EXPLODED VIEW OF CASSETTE TAPE DECK

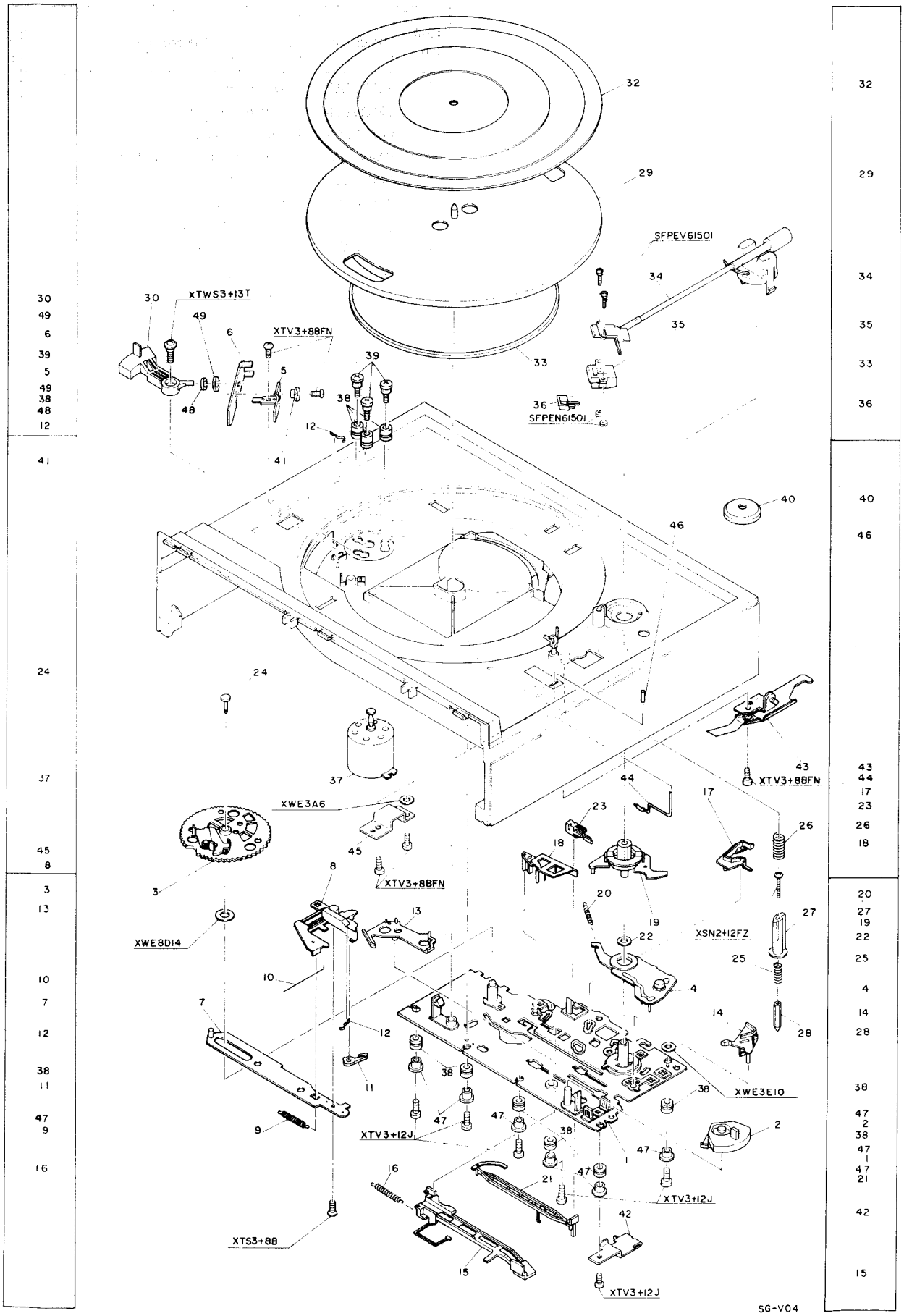


REPLACEMENT PARTS LIST OF CASSETTE TAPE DECK

Ref. No.	Part No.	Description	Per Set (pcs.)
2	SMQ4298	REC Safety Lever w/Spring	1
3	SMQ3894	R/P Head Base	1
4	SMQ3896	Spring, RC	1
5	SMQ4596	Spring, Head	2
6	SJH60	R/P Head	1
7	SJH62	Erase Head	1
8	SMQ4302	Lever Ass'y, Auto Stop	1
9	SMQ4304	Take Up Roller Ass'y w/Spring	1
10	SMQ3904	Pinch Roller Ass'y	1
11	SMQ3906	Reel Ass'y, Take Up	1
12	SMQ3908	Spring, Take Up Reel	1
13	SMQ3910	Reel Ass'y, Supply	1
14	SMQ3912	Spring, Supply Reel	1
15	SMQ3914	Poly Washer	2
16	SMQ4308	FF Idler Arm Ass'y	1
17	SMQ3918	Spring, FF Idler Arm	1
18	SMQ4264	Main Plate Ass'y	1
19	SMQ3922	Spring, Main Plate	1
20	SMQ4310	RF Clutch Ass'y	1
21	SMQ4312	Spring, RF Clutch	1
22	SMQ4270	Spring Plate, RWD	1
23	SMQ2538	Pad, Flywheel	1
24	SMQ3930	Flywheel	1
25	SMQ3932	Spring, Thrust	1
26	SMQ1402	Nylon Washer	1
27	SMQ3934	Nylon Washer	1
29	SMQ4314	Lock Arm Ass'y	1
30	SMQ3940	Spring, Lock Arm	1
31	SMQ4276	Shaft	1
32	SMQ4278	Spring Plate, Cassette Hold	1
33	MMI6A2RK-1	Motor	1
34	SMQ1802-1	Pulley, Motor	1
35	SMQ1834	Rubber Cushion, Motor	3
36	SMQ1908	Spacer Screw	3
37	SMQ2556	Main Belt	1
38	SMQ4316	Eject Slide Lever Ass'y w/Spring	1
39	SMQ3950	Spacer Screw	2
40	SMQ3952	Spacer Screw	1
41	SMQ3954	Base, Push Button	1
42	SMQ4318	Slide Lever Ass'y, REC	1
43	SMQ3958	Spring, REC Slide Lever	1
44	SMQ4320	Slide Lever Ass'y, Play	1
45	SMQ3962	Spring, Play Slide Lever	1
46	SMQ4322	Slide Lever Ass'y, FF	1
47	SMQ4324	Slide Lever Ass'y, RWD	1
48	SMQ4606	Spring, Stop Slide Lever	1
49	SMQ4326	Slide Lever, Stop	1
50	SMQ4328	Slide Lever Ass'y, Pause	1
51	SMQ3974	Spring, Pause Slide Lever	1
52	SMQ2444	Click Lever, Pause	1
53	SMQ3976	Spring, Pause Click Lever	1
54	SMQ3978	Stopper, Pause Click Lever	1
55	SMQ3980	Leaf Switch	1

Ref. No.	Part No.	Description	Per Set (pcs.)
56	SMQ3982	Arm Lever	1
57	SMQ3984	Spacer Screw	1
58	SMQ3986	Bracket, Eject	1
60	SMQ4330	Guide Bracket, Main Belt	1
62	SMQ4332	Spring Plate, REC	1
64	SMQ4260	Poly Washer	1
65	SBC488	Button, Cassette	6
66	SMQ4334	Shaft, Cassette Button	1
71	SMQ4344	Spring, Cassette Button	3
72	SMQ4346	Spring, FR Slide Lever	2
83	SMQ4598	Block, Flyweel	1
84	SMQ4614	Collar, Rewind Stopper	1
85	SMQ4616	Spring Plate, Head Panel Hold	1
86	SMQ4618	Leaf Switch	1
100	SMQ4096	Gear, Cassette Holder	1
103	SMQ4066	Belt, Counter	1
108	SNE270	Spacer Screw	1

EXPLODED VIEW OF RECORD PLAYER



REPLACEMENT PARTS LIST OF RECORD PLAYER

Ref. No.	Part No.	Description	Per Set (pcs.)
1	SJY450	Base Plate Assembly	1
2	SJY90074	Lever, Record Size	1
3	SJY434	Main Gear Assembly	1
4	SJY440	PU Moving Plate	1
5	SJY90166	Angle, Speed Select	1
6	SJY90168-1	Plate, Speed Select	1
7	SJY398	Operating Plate Assembly	1
8	SJY90014-1	Bracket, Operating Plate	1
9	SJY90066-1	Spring A, Operating Plate	1
10	SJY90068-1	Spring B, Operating Plate	1
11	SJY90016	Operating Plate, Tone Arm	1
12	SJY90018	Spring Plate	2
13	SJY90020	Index Lever	1
14	SJY90022	Clamp Plate	1
15	SJY90024-3	Start Rod	1
16	SJY90070	Spring, Start Rod	1
17	SJY90026	Operating Plate A	1
18	SJY90028-4	Operating Plate B	1
19	SJY90030-1	Tone Arm Plate	1
20	SJY90072	Spring, Tone Arm Plate	1
21	SJY90032-1	Actuating Plate	1
22	SNW622-3	Washer	1
23	SSP66	Switch, Motor	1
24	SHR9174	Stopper Pin, Main Gear	1
25	SJY90160	Spring A, Lifter	1
26	SUS84-2	Spring B, Lifter	2
27	SJY5196-2	Lifter	1
28	SJY90034	Pin, Lifter	1
29	SJY400	Turntable Assembly	1
30	SJY90164	Lever, Speed Select	1
32	SJY4054-2	Turntable Mat	1
33	SJY90080	Turntable Belt	1
34	EPA642STBD	Tone Arm	1
35	EPC095TAD	Cartridge with Stylus	1
36	EPS27STSD	Stylus	1
37	MMIV03	Motor Assembly	1
38	SHG9092	Rubber	9
39	SJY9168	Screw, Motor	3
40	SJY5018-1	EP Adapter	1
41	SUD250	Spacer	1
42	SJY90204	Bracket, Base Plate	1
43	SJY414	Sliding Board Ass'y	1
44	SJY90218	Lever, Cueing	1
45	SJY90178	Cueing Lever Plate	1
46	SJY5050	Knob, Cueing	1
47	SUD384	Spacer	6
48	SUD388	Spacer	1
49	SNW322-1	Washer	1

■ Items of Assembly Parts

Paf. No.	Part No.	Description	Per Set (pcs.)
1	**SJY450**	**Base Plate Assembly**	**1**
		Base Plate	(1)
		Bracket, Turntable Shaft	(1)
3	**SJY434**	**Main Gear Ass'y**	**1**
		Actuating Link	(1)
		Friction Link	(1)
		Push Nut	(1)
7	**SJY398**	**Operating Plate Ass'y**	**1**
		Operating Plate	(1)
		Operating Pin	(1)
29	**SJY400**	**Turntable Ass'y**	**1**
		Turntable	(1)
		Shaft, Turntable	(1)
		Gear	(1)
37	**MMIV03**	**Motor Ass'y**	**1**
		Motor	(1)
		Motor Pulley	(1)
43	**SJY414**	**Sliding Board Ass'y**	**1**
		Spling, Cueing	(1)
		Angle, Cueing	(1)
		Plate, Cueing	(1)
		Spacer	(1)

ORDER NO. TSD8207011C2

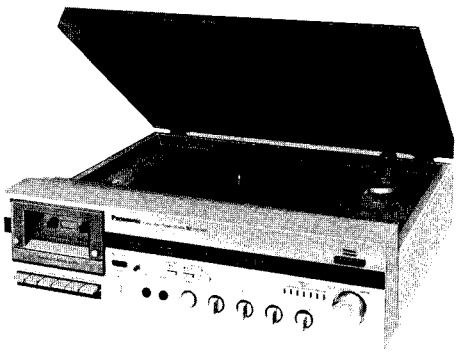
Service Manual

Stereo Music System

FM/MW/LW/FM STEREO RADIO WITH CASSETTE TAPE DECK AND RECORD PLAYER

SG-V04

for W. Germany



Please use this manual together with the service manual for Model No. SG-V04 Order No. TSD8204003C2

■ **SPECIFICATIONS (Page 1)**

	SG-V04		SG-V04 for W. Germany
POWER SUPPLY	AC110V, 120V, 220V, 240V 50/60 Hz	➡	AC220V 50/60Hz

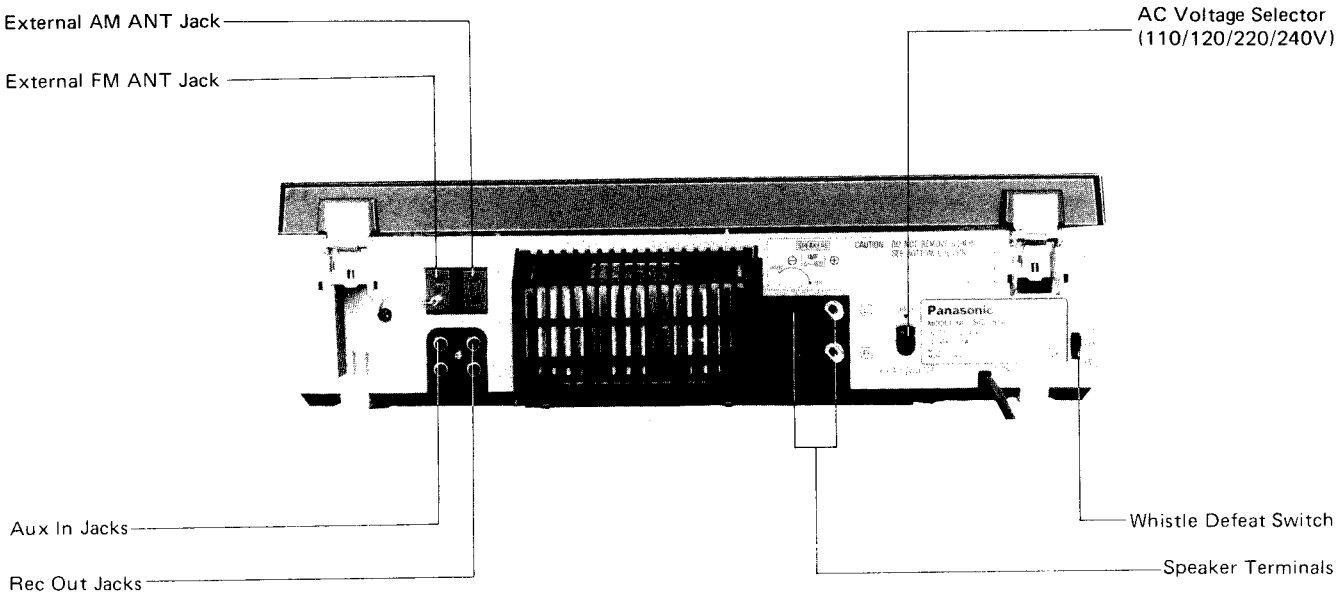
■ **REPLACEMENT PARTS LIST (Page 9, 10, 15, 19)**

Ref. No.	Difference of Part No. SG-V04 ➡ SG-V04 for W. Germany		Descriptions		Per Set (p.c.s.)	Remarks
COILS AND TRANSFORMERS						
T1 ⚠	SLT5M198V	**SLT5M218-V**	Power Transformers		1	Changed
SWITCHES						
S1 ⚠	ESE37205	.....	.....		0	Deleted
OTHERS						
1	SQX50448	**SQX50536**	Instruction Book (English/Deutsch/Francais)		1	Changed
2	SQX50450	.....	.....		0	Deleted
RESISTORS						
R721	.....	**ERD25FJ102**	1K	1/4W	1	Added
R722	.....	**ERD25FJ102**	1K	1/4W	1	Added
CAPACITORS						
C112	ECCD1H080CC	**ECCD1H050CC**	5 pF	50V	1	Changed
C122	.....	**ECKD1H101KB**	100 pF	50V	1	Added
C123	.....	**ECKD1H223ZF**	0.022	50V	1	Added
C201	ECKD1H151KB	.....	.....		0	Deleted
C202	ECKD1H101KB	.....	.....		0	Deleted
C239	.....	**ECKD1H101KB**	100 pF	50V	1	Added
C111	ECCD1H200KS	**ECCD1H220KR**	22pF	50V	1	Changed
CABINET AND CHASSIS						
1	SYK1980	**SYK1980-1**	Cabinet Ass'y		1	Changed
8	SYP660	**SYP660-2**	Front Panel Ass'y		1	Changed
12	SYE368	**SYE968**	Cassette Holder Ass'y		1	Changed
26	SUV172	.....	.....		0	Deleted
30	SJS9408	.....	.....		0	Deleted

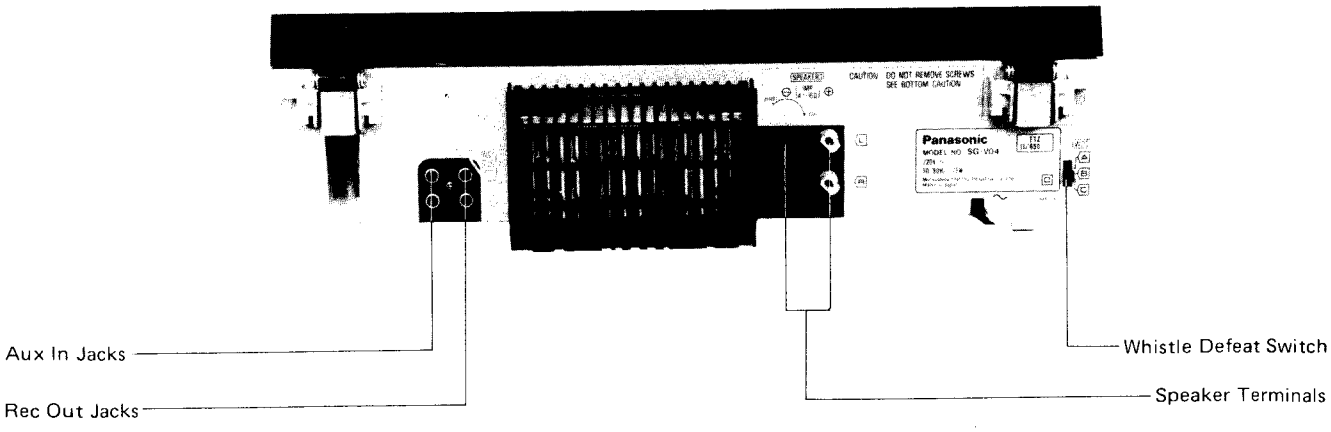
Panasonic

Matsushita Electric Trading Co., Ltd.
P. O. Box 288, Central Osaka, Japan

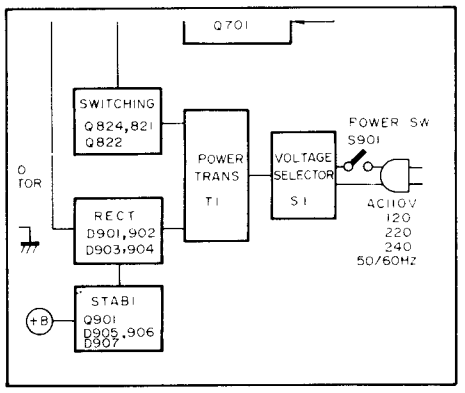
■ LOCATION OF CONTROLS (Page 2)



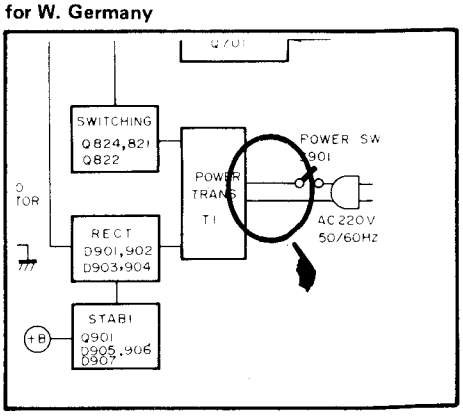
for W. Germany



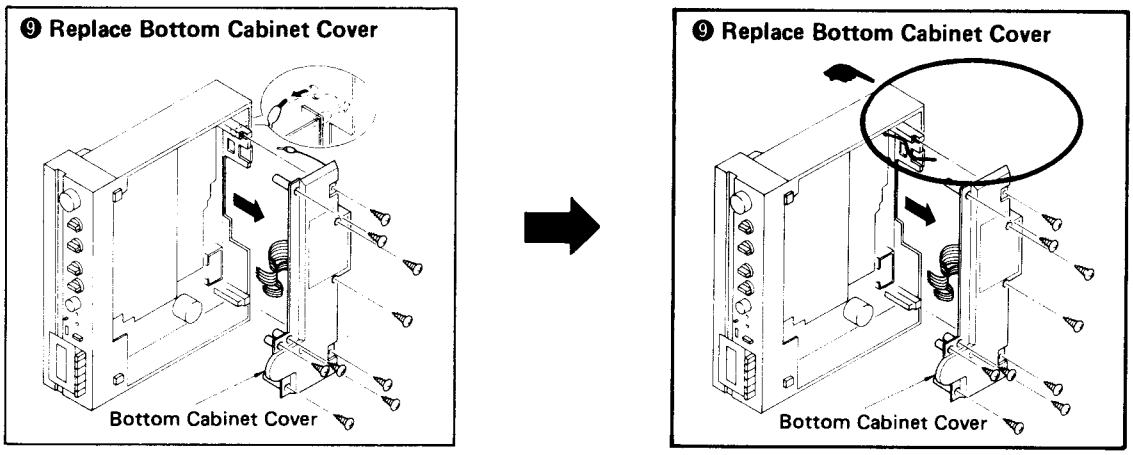
■ BLOCK DIAGRAM (Page 17)

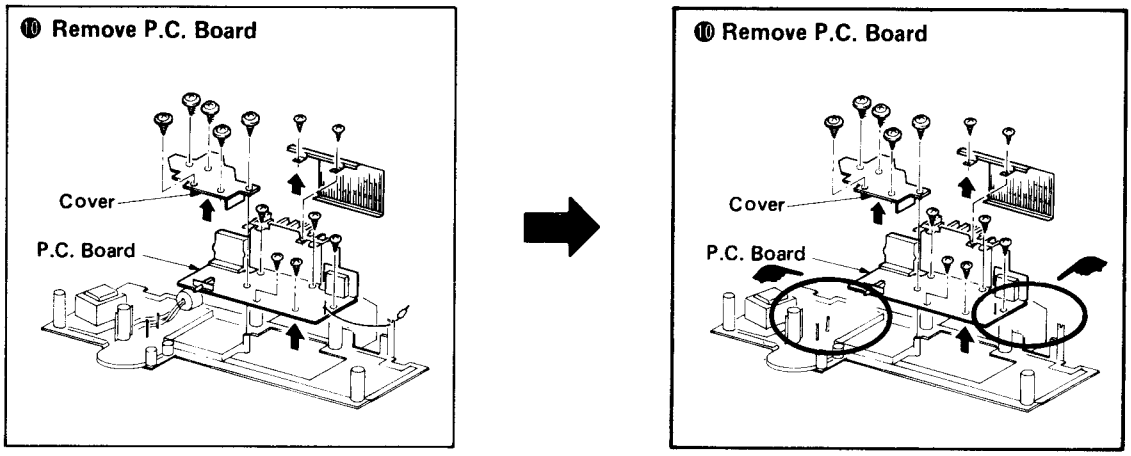


for W. Germany

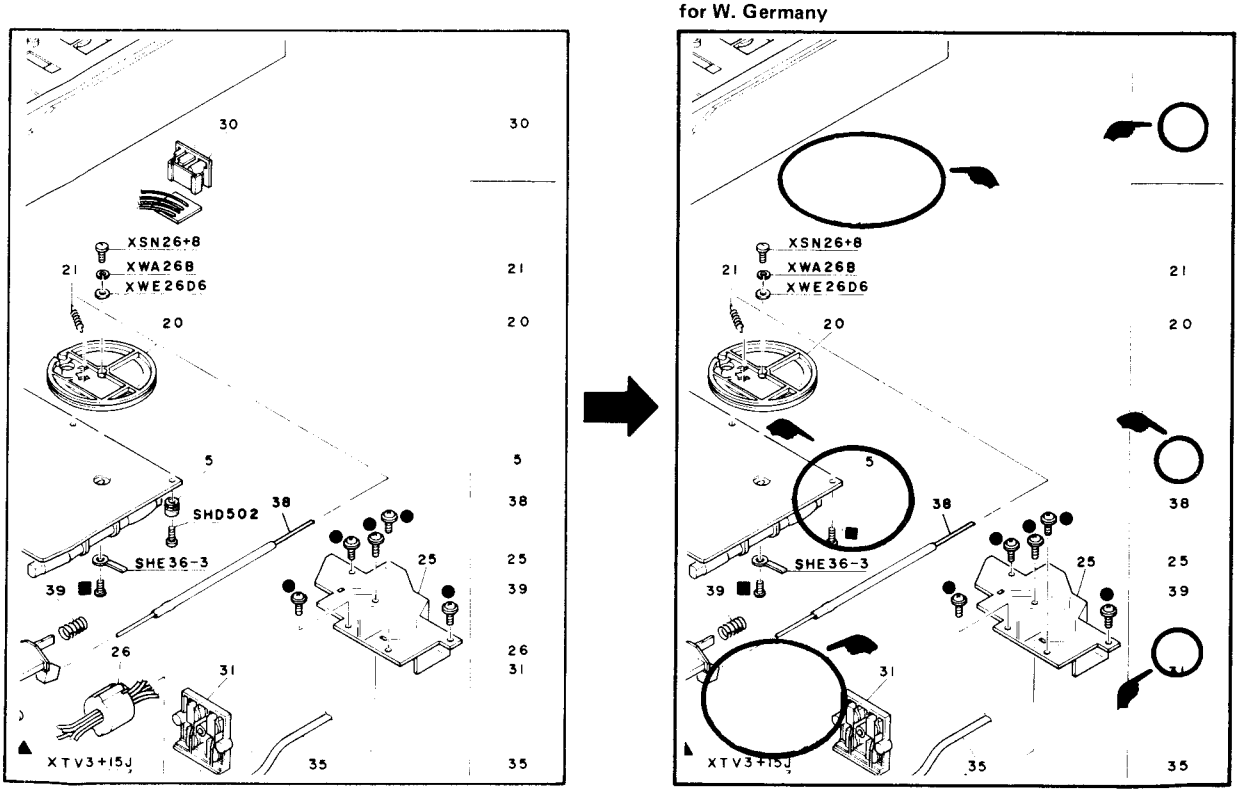


■ DISASSEMBLY INSTRUCTIONS (Page 3)





■ PARTS LOCATION OF CABINET AND CHASSIS (Page 18)



■ ALIGNMENT INSTRUCTIONS (Page 4)

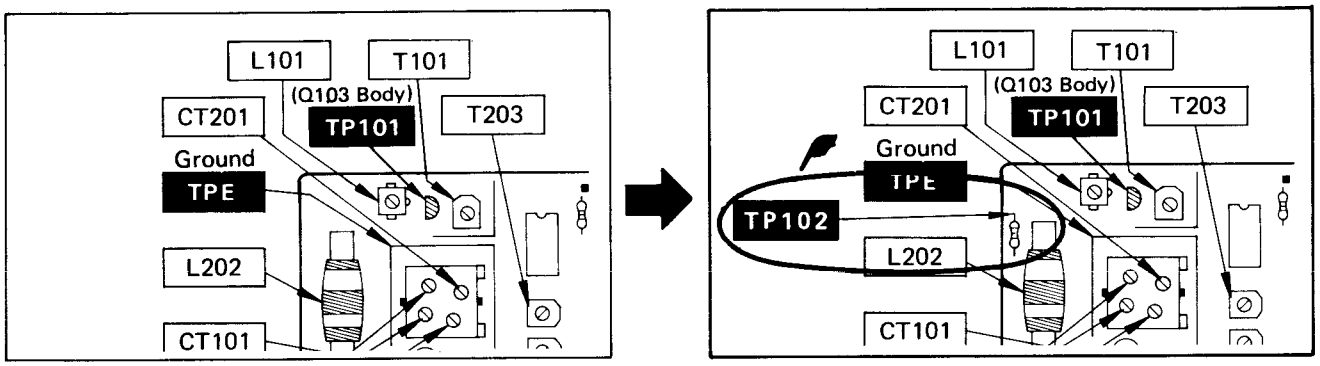
FM-RF ALIGNMENT

1	Connect to EXT. FM antenna terminal through Dummy antenna. (300Ω)	87.35 MHz 30% Mod. with 400 Hz	87.35 MHz Set the dial pointer to the left end of the scale. (or lower frequency edge.)
2		108.3 MHz 30% Mod. with 400 Hz	108.3 MHz Set the dial pointer to the right end of the scale. (or upper frequency edge.)

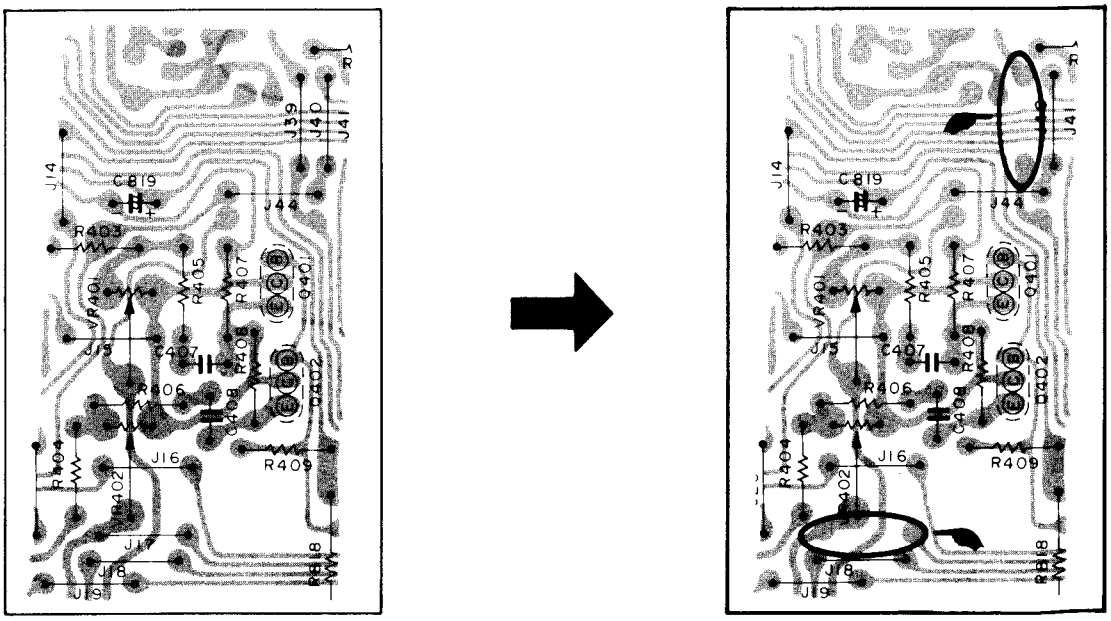
for W. Germany

1	Connect to TP102 and TPE (ground) through dummy antenna (75Ω)	87.435 MHz 30% Mod. with 400 Hz	87.435 MHz Set the dial pointer to the left end of the scale. (or lower frequency edge.)
2		108.14 MHz 30% Mod. with 400 Hz	108.14 MHz Set the dial pointer to the right end of the scale. (or upper frequency edge.)

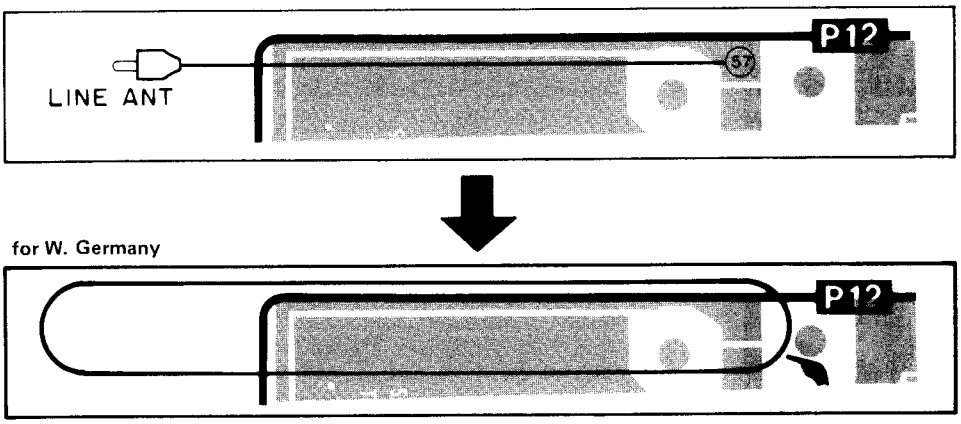
■ ALIGNMENT POINTS (Page 6)



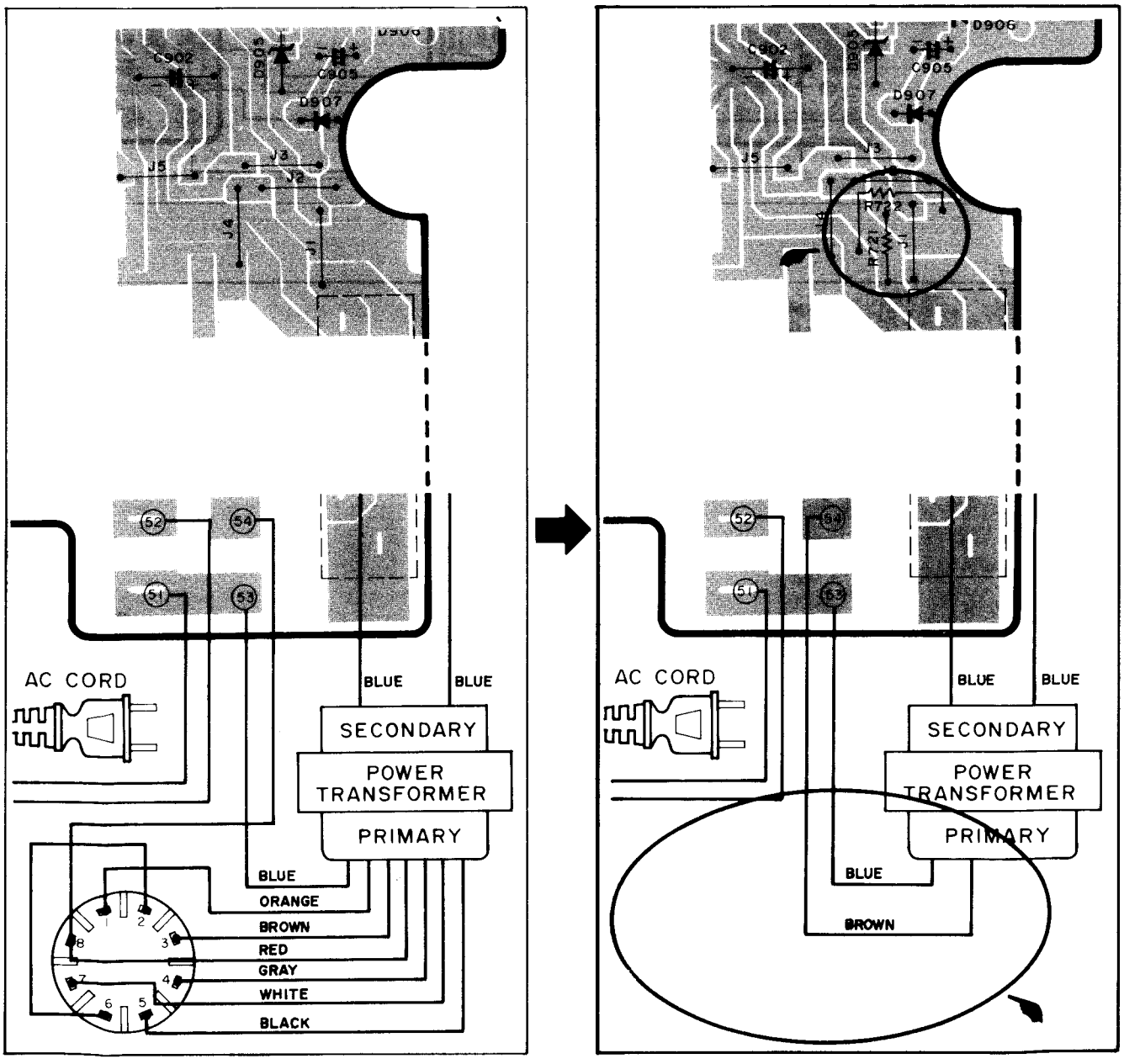
■ CIRCUIT BOARD AND WIRING CONNECTION (Page 13)



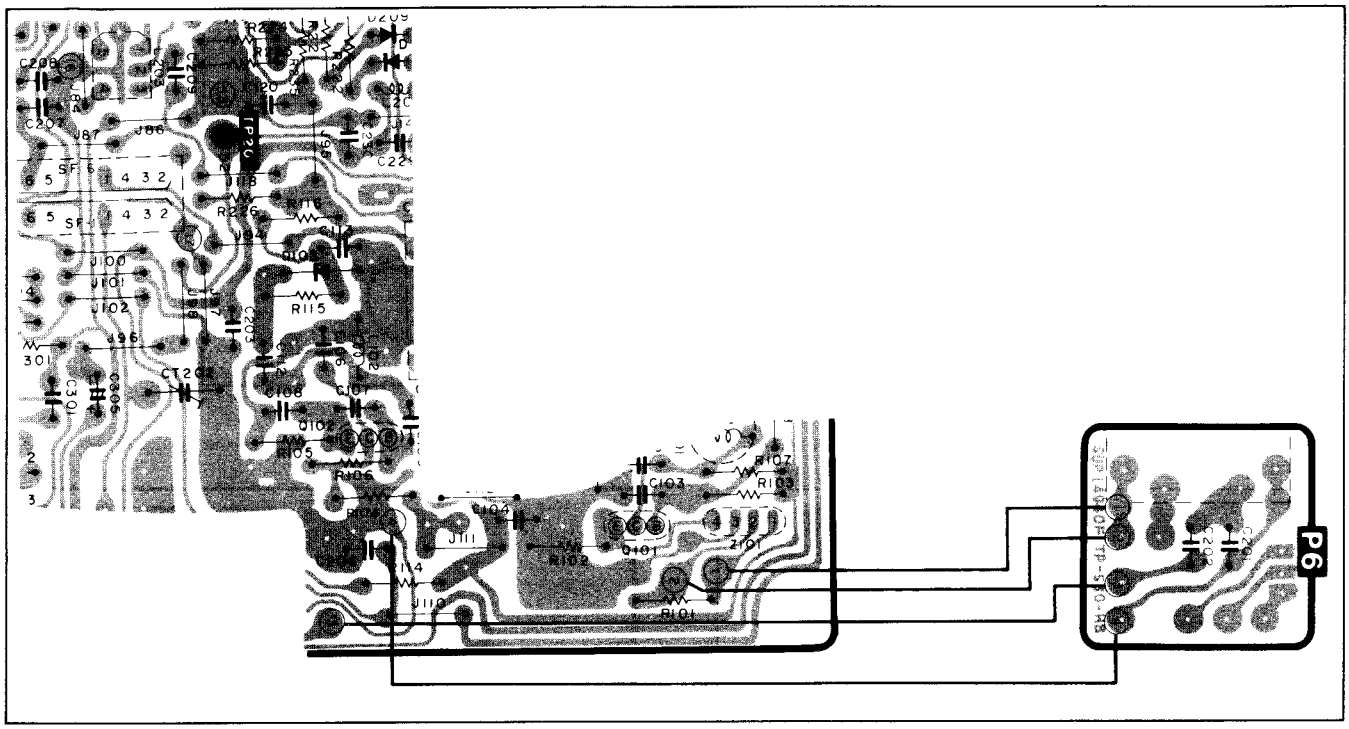
■ CIRCUIT BOARD AND WIRING CONNECTION (Page 13)



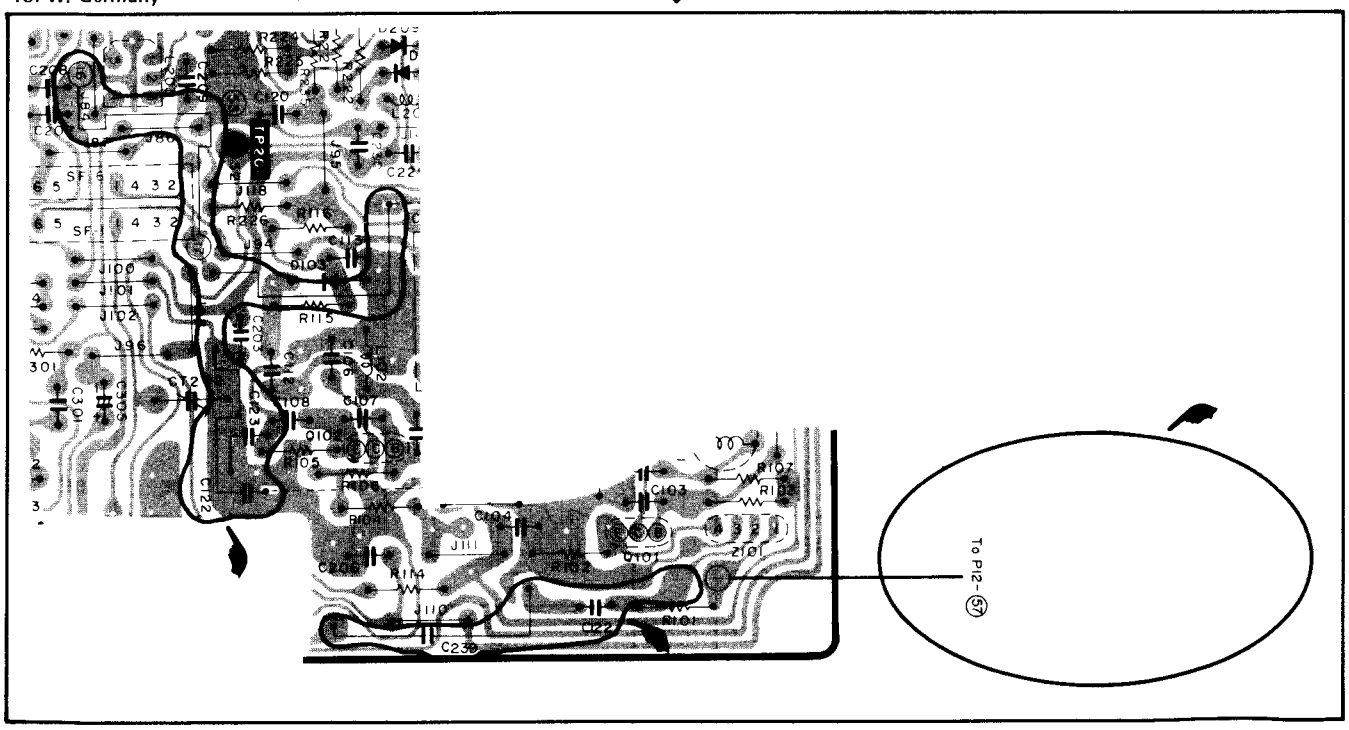
for W. Germany



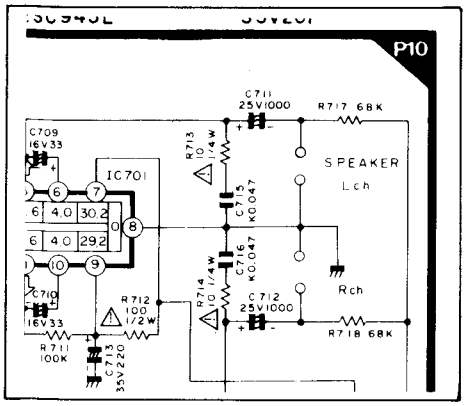
■ CIRCUIT BOARD AND WIRING CONNECTION (Page 13)



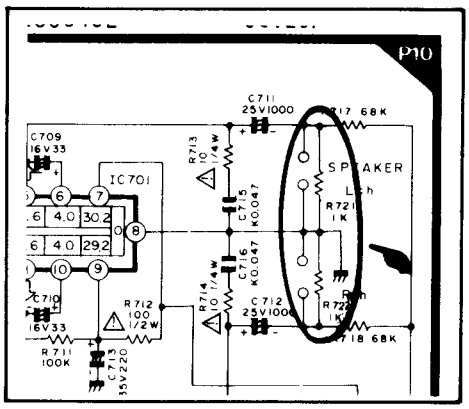
for W. Germany

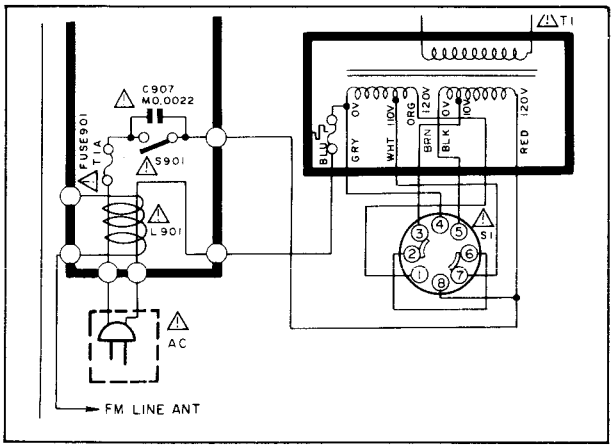


■ SCHEMATIC DIAGRAM (Page 14)



for W. Germany





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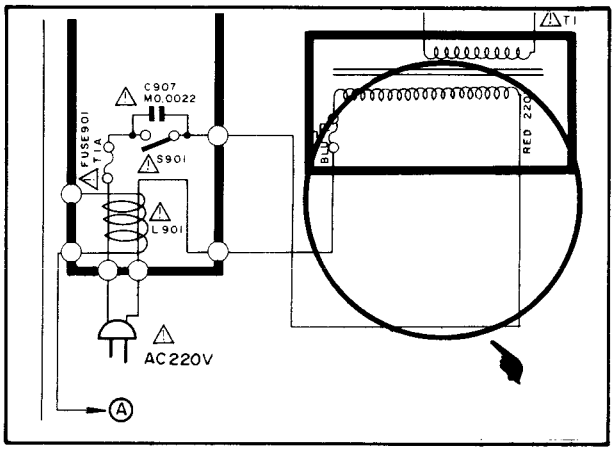
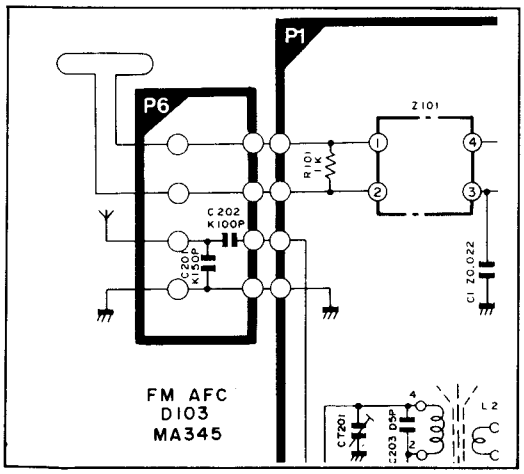
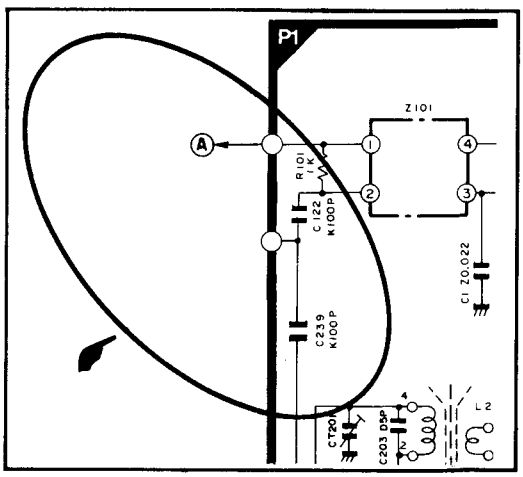




for W. Germany



TECHNISCHE DATEN

VERSTÄRKER-TEIL

Ausgangsleistung	14W x 2 (Gesamtklirrfaktor 5%, an 4 Ω) bei Aussteuerung eines Kanals 10W x 2 (Gesamtklirrfaktor 5%, an 4 Ω) bei Aussteuerung beider Kanäle
Eingangsempfindlichkeit & Impedanz:	
Mikrofoneingang	1,5mV, 1,5 kΩ
Reserveeingang	250mV, 47 kΩ
Aufnahmeausgang & Impedanz	150mV, 10 kΩ
Klangfarbenregler:	
Baßregler	± 8 dB bei 100 Hz
Höhenregler	± 8 dB bei 10 Kiloherz
Ausgangsimpedanz	4 Ω

UKW-TUNER-TEIL

Frequenzbereich	87,5 ~108MHz
Zwischenfrequenz (ZF)	10,7 MHz
Empfindlichkeit	2,5 µV (Rauschabstand 26 dB, mod. 40 kHz) (DIN)bei 300 Ω
Spiegelselektion	35 dB (98 MHz)
Rauschabstand	63 dB (bei 1 kHz, 60 dB, 40 kHz)
Klirrfaktor	MONO: 0,5% (bei 1 kHz, 60 dB, 40 kHz) STEREO: 0.6% (bei 1 kHz, 60 dB, 40 kHz)
Stereo-Kanaltrennung	40 dB (bei 1 kHz, 60 dB, 40 kHz)

MW/LW-TUNER-TEIL

Frequenzbereich	MW: 525 kHz ~1 605 kHz (571m ~187 m) LW: 150 kHz ~350 kHz) (2 000 m ~ 857 m)
Zwischenfrequenz (ZF)	468 kHz
Empfindlichkeit	MW: 180 µV/m (1 MHz) LW: 300 µV/m (240 kHz)
Spiegelselektion	MW: 40 dB (1 MHz) LW: 47 dB (240 kHz)

KASSETTENBANDGERÄT-TEIL

Spursystem	4-Spuren, 2-Kanäle
Aufnahmesystem	Wechselstromvormagnetisierung (50kHz) mit Dolby-Rauschunterdrückungssystem
Löschsystem	Wechselstromlöschung (50 kHz)
Bandgeschwindigkeit	4,75 cm/sec. (1-7/8 i.p.s.)
Frequenzgang	35Hz ~15kHz (Normal) 35Hz ~15kHz (Cro_2) 35Hz ~16kHz (Reineisenband) } (DIN)
Rauschabstand	
OHNE DOLBY-RAUSCHUNTERDRÜCKUNG	50dB (Normal) 52dB (CrO_2) 52dB (Reineisenband) } (DIN)
MIT DOLBY-RAUSCHUNTERDRÜCKUNG	58dB (Normal) 60dB (CrO_2) 60dB (Reineisenband) } (10 dB oder besser bei mehr als 5 kHz) (DIN)
Löschverhältnis	60 dB (DIN)
Gleichlaufschwankungen	0,2% (WRMS)

PLATTENSPIELER-TEIL

Plattenspielersystem	Vollautomatischer Plattenspieler Mit Riemenantrieb, Start-/Einlaufautomatik Und Automatischer Tonarmrückführung
Plattenteller	Durchmesser 28 cm (11")
Plattentellerdrehzahl	33-1/3 und 45 U/min
Plattenspielermotor	Gleichstrommotor Mit Elektrischem Drehzahlregler
Gleichlaufschwankungen	0,15% (WRMS), ± 0,25% (DIN, Bewertet)
Tonabnehmersystem	Keramisches Tonabnehmersystem (EPC 09S TAD)
Abtastnadel	Diamantspitze (EPS 27 STSD)
Auflagekraftbereich	5 ~7g
LEISTUNGSAUFNAHME	75 W
STROMVERSORGUNG	Netzstrom 110V, 120V, 220V, 240V, 50/60 Hz
ABMESSUNGEN (B x H x T)	450 x 125 x 460mm
GEWICHT	6,4 kg

* Änderungen der technischen Daten im Sinne der Weiteren Verbesserung jederzeit vorbehalten.

ANWEISUNGEN ZUM ABGLEICH-1

■ **AM-Abgleich**

Hinweise:

1. Lautstärkeregler . . . . . .Mittelstellung (MW/LW-ZF und HF, UKW-ZF); ganz zurückgedreht (UKW-ZF)
2. Baßregler . . . . . .Mittelstellung
3. Höhneregler . . . . . .Mittelstellung
4. Balanceregler . . . . . .Mittelstellung
5. Funktionswahlschalter . . . . .MW, LW, FM AUTO, FM MONO
6. Netzschalter . . . . . .ON
7. Der Ausgang des Meßsenders sollte nur so hoch sein, daß dieser angezeigt wird.
8. Beim Abgleich darauf achten, daß die Lautsprecherboxen an den Receiver angeschlossen sind (oder Ersatzlastwiderstände mit 4 Ω verwenden).

SCHRITT	MESSOSZILLATOR oder WOBBELGENERATOR ANSCHLUSS	MESSOSZILLATOR oder WOBBELGENERATOR FREQUENZ	EINSTELLUNG DER ABSTIMMSKALA	ANZEIGEINSTRUMENT	EINSTELLEN	BEMERKUNGEN
AM-ZF-ABGLEICH UND HF-ABGLEICH						
1 (MW)	Eine Schleife aus mehreren Drahtwindungen bilden, und das Signal der Schleife des Empfängers zuleiten	468 kHz, 30% Modulation bei 400 Hz	Punkt ohne Störung	Ausgangsleistungsmesser über die linke (L) Lautsprecherklemme	T201 (MW/LW-ZF) T202 (MW/LW-ZF)	Auf maximalen Ausgang einstellen.
2 (MW)		513 kHz, 30% Modulation bei 400 Hz	513 kHz		L203 (MW-OSZILLATOR) L201 (MW-ANTENNE)	· Auf maximalen Ausgang einstellen, indem man die Spule L201 dem Ferritkern entlang schiebt. · **Siehe Anmerkung.**
3 (MW)		1645 kHz, 30% Modulation bei 400 Hz	1645 kHz		CT203 (MW-OSZILLATOR-TRIMMER) CT201 (MW-ANTENNEN-TRIMMER)	Auf maximalen Ausgang einstellen. Die Schritte (2) und (3) wiederholen.
4 (MW)		142 kHz, 30% Modulation bei 400 Hz	142 kHz		L204 (LW-OSZILLATOR) L202 (LW-ANTENNE)	Auf maximalen Ausgang einstellen, indem man die Spule L202 dem Ferritkern entlang schiebt. · **Siehe Anmerkung**
5 (MW)		363 kHz, 30% Modulation bei 400 Hz	363 kHz		CT204 (LW-OSZILLATORTRIMMER) CT-202 (LW-ANTENNENTRIMMER)	Auf maximalen Ausgang einstellen. Die Schritte (2) und (3) wiederholen.
Bemerkung: Nach Abgleitch die Antennenwindungen L202, 201 mit Wachs zementieren.						
FM-IF-ABGLEICH						
1	Oberer Bereich über 5 pF zu den Meßpunkten TP101 und TPE (Erde).	10,7 MHz (400 kHz Hub)	Punkt ohne Störung	Den Vertikalamplitudeneingang des Oszilloskops mit den Meßpunkten TP201 und TP202 (Erde) verbinden.	T101 (UKW-ZF) T203 (UKW-Disc.)	Auf maximale Amplitude und symmetrische Kurve einstellen. · **Siehe Anmerkung.**
2					T204 (UKW-ZF) T203 (UKW-Disc.)	Auf maximale Amplitude und richtige Linearität zwischen den Marken von ungefähr ± 100 kHz einstellen
Bemerkung: Vor Ausführung des Schrittes 1 die Kerne des T204 ganz gegen den Uhrzeigersinn drehen.						
FM-RF-ABGLEICH						
1	Über eine künstliche Antenne (300 Ohm) an die UKW-Außenantennenklemme (EXT. FM) anschließen.	87, 35 MHz, 30% Modulation bei 400 Hz	87, 35 MHz Den Skalenzeiger auf das linke Ende der Skala (oder auf die untere Frequenzgrenze) einstellen.)	Ausgangsleistungsmesser über die linke (L) Lautsprecherklemme	L102 (UKW-OSZILLATORSPULE) L101 UKW-ANTENNENSPULE)	Auf maximalen Ausgang einstellen.
2		108,3 MHz, 30% Modulation bei 400 Hz	108,3 MHz Den Skalenzeiger auf das rechte Ende der Skala (oder auf die obere Frequenzgrenze) einstellen.		CT102 (UKW-OSZILLATOR-TRIMMER) CT101 (UKW-ANTENNEN-TRIMMER)	Auf maximalen Ausgang einstellen. Die Schritte (1) und (2) wiederholen.

Bemerkungs: 1. Da drei Ausgangsanzeigen vorliegen, müssen die Enstellungen bei Mittenfrequenz durchgeführt werden.
2. Um Abgleiten der FM-Skala (87,5 oder 108 MHz) zu korrigieren, die Spule L102 und den Trimmer CT102 miteinander abstimmen.

■ UKW-Stere

Einstellunge
Den Frequ bei 98 MH Eingang (M

■ Kassetten

Kontroll-Ei	
SCHRITT	AB O
1	Vorm ungss für L
2	Vorm ungss Aufna

Stellungen	
SCHRITT	A
1	Aufn gabek
2	Dolb erdrü
3	Aufn trom

etisierung
uschunter-

(50 kHz)
.s.)
l)
senband)
} (DIN)

} (DIN)

(10 dB oder bes-
ser bei mehr
als 5 kHz) (DIN)

ttenspieler
art-/Ein-
tomatischer

1'')

Elektri-

5% (DIN,

mmersystem

7 STSD)

V, 220V,

ANWEISUNGEN ZUM ABGLEICH-1

■ **AM-Abgleich**

Hinweise:
1. Lautstärkeregler . . . . . .Mittelstellung (MW/LW-ZF und HF, UKW-ZF); ganz zurückgedreht (UKW-ZF)
2. Baßregler . . . . . .Mittelstellung
3. Höhneregler . . . . . .Mittelstellung
4. Balanceregler . . . . . .Mittelstellung
5. Funktionswahlschalter . . . . .MW, LW, FM AUTO, FM MONO
6. Netzschalter . . . . . .ON
7. Der Ausgang des Meßsenders sollte nur so hoch sein, daß dieser angezeigt wird.
8. Beim Abgleich darauf achten, daß die Lautsprecherboxen an den Receiver angeschlossen sind (oder Ersatzlastwiderstände mit 4 Ω verwenden).

SCHRITT	MESSOSZILLATOR oder WOBBELGENERATOR		EINSTELLUNG DER ABSTIMM-SKALA	ANZEIGE-INSTRUMENT	EINSTELLEN	BEMERKUNGEN
	ANSCHLUSS	FREQUENZ				
AM-ZF-ABGLEICH UND HF-ABGLEICH						
1 (MW)	Eine Schleife aus mehreren Drahtwindungen bilden, und das Signal der Schleife des Empfängers zuleiten	468 kHz, 30% Modulation bei 400 Hz	Punkt ohne Störung	Ausgangsleist-ungsmesser über die linke (L) Lautsprecherklemme	T201 (MW/LW-ZF) T202 (MW/LW-ZF)	Auf maximalen Ausgang einstellen.
2 (MW)		513 kHz, 30% Modulation bei 400 Hz	513 kHz		L203 (MW-OSZILLATOR) L201 (MW-ANTENNE)	· Auf maximalen Ausgang einstellen, indem man die Spule L201 dem Ferritkern entlang schiebt. · **Siehe Anmerkung.**
3 (MW)		1645 kHz, 30% Modu-lation bei 400 Hz	1645 kHz		CT203 (MW-OSZILLATOR-TRIMMER) CT201 (MW-ANTENNEN-TRIMMER)	Auf maximalen Ausgang einstellen. Die Schritte (2) und (3) wiederholen.
4 (MW)		142 kHz, 30% Modu-lation bei 400 Hz	142 kHz		L204 (LW-OSZILLATOR) L202 (LW-ANTENNE)	· Auf maximalen Ausgang einstellen, indem man die Spule L202 dem Ferritkern entlang schiebt. · **Siehe Anmerkung**
5 (MW)		363 kHz, 30% Modu-lation bei 400 Hz	363 kHz		CT204 (LW-OSZI-LLATORTRIMMER) CT-202 (LW-ANTEN NENTRIMMER)	Auf maximalen Ausgang einstellen. Die Schritte (2) und (3) wiederholen.
Bemerkung: Nach Abgleitch die Antennenwindungen L202, 201 mit Wachs zementieren.						
FM-IF-ABGLEICH						
1	Oberer Bereich über 5 pF zu den Meßpunkten TP101 und TPE (Erde).	10,7 MHz (400 kHz Hub)	Punkt ohne Störung	Den Vertikalamplitu-deneingang des Oszilloskops mit den Meßpunkten TP201 und TP202 (Erde) verbinden.	T101 (UKW-ZF) T203 (UKW-Disc.)	· Auf maximale Amplitude und symmetrische Kurve einstellen. · **Siehe Anmerkung.**
2					T204 (UKW-ZF) T203 (UKW-Disc.)	Auf maximale Amplitude und richtige Linearität zwischen den Marken von ungefähr ± 100 kHz einstellen
Bemerkung: Vor Ausführung des Schrittes 1 die Kerne des T204 ganz gegen den Uhrzeigersinn drehen.						
FM-RF-ABGLEICH						
1	Über eine künstliche Antenne (300 Ohm) an die UKW-Außen-antennenklemme (EXT. FM) anschließen.	87, 35 MHz, 30% Modulation bei 400 Hz	87, 35 MHz Den Skalen-zeiger auf das linke Ende der Skala (oder auf die untere Fre-quenzgrenze) einstellen.)	Ausgangsleistung-smesser über die linke (L) Laut-sprecherklemme	L102 (UKW-OS-ZILLATORSPULE) L101 UKW-ANTENNEN-SPULE)	Auf maximalen Ausgang einstellen.
2		108,3 MHz, 30% Modulation bei 400 Hz	108,3 MHz Den Skalen zeiger auf das rechte Ende der Skala (oder auf die obere Fre-quenzgrenze) einstellen.		CT102 (UKW-OS-ZILLATOR-TRIMMER) CT101 (UKW-AN-TENNEN-TRIMMER)	Auf maximalen Ausgang einstellen. Die Schritte (1) und (2) wiederholen.

Bemerkungs:
1. **Da drei Ausgangsanzeigen vorliegen, müssen die Enstellungen bei Mittenfrequenz durchgeführt werden.**
2. **Um Abgleiten der FM-Skala (87,5 oder 108 MHz) zu korrigieren, die Spule L102 und den Trimmer CT102 miteinander abstimmen.**

ANWEISUNGEN ZUM ABGLEICH-2

■ **UKW-Stereoabgleich**

Einstellungen: Lautstärkeregler . . . . . .Lautsprecher-Hörlautstärke
Baß-, Höhenregler . . . . . .MIN
Wellenbereichswahlschalter . . . . . .FM AUTO
Balanceregler . . . . . .Mittenstellung

GERÄTEANSCHLUSS	EINSTELLEN	BEMERKUNGEN
Den Frequenzzähler an TP301 und TP202 (Masse) bei 98 MHz anschließen; ohne Modulation bei 60 dB Eingang (Mono-Signal).	VR301	VR301 so einstellen, daß der Frequenzzähler 19, 10 kHz ± 50 Hz anzeigt.

■ **Kassettenbandgerçt-Abgleich**

NULL ABGLEICHUNG -ABGLEICH

Kontroll-Einstellungen:
1. Kassettenbandgerät-Betriebsart . . . . . .Aufnahme-Betriebsart
2. Dolby-Rauschunterdrückungsschalter . . . . . .OUT
3. Schalter zum Unterdrücken von Interferenzpfeifen . . . . .Seite B

SCHRITT	ABGLEICH-OBJEKT	RÖHRENVOLTMETER (RVM)-ANSCHLUSS		EINSTELLUNG DES TONBAND-GERÄTES	EINSTELLEN	BEMERKUNGEN
		Positiv	Negativ			
1	Vormagnetisier-ungsstrom für Löschung	TP801	TP802	Metal	VR803	VR803 so einstellen, daß das Röhren-voltmeter 150 ± 5 mV anzeigt.
2	Vormageneisier-ungsstrom für Aufnahme	TP401 (linker Kanal) TP402 (rechter Kanal)	TP403	Normal	VR801 VR802	· VR802 so einstellen, das Röhren-voltmeter 3,8 ± 0,1 mV anzeigt. (Reineisenband: 8,4 ± 1,0 mV) (CrO_2 -Band: 4,9 ± 0,2 mV) · VR801 so einstellen, daß die gleiche Spannung angezeigt wird.

AZIMUTH-, DOLBY-, REC-STROM-ABGLEICH

Stellungen der Bedienungselemente:
1. Kassettenbandgerät-Betriebsart . . . . . .Wiedergabe-Betriebsart
2. Bandsortenwahlschalter . . . . . .NORMAL

SCHRITT	ABGLEICH-OBJEKT	ROHRENVOLTMETER (RVM)-ANSCHLUSS		TESTBAND-PEGEL	DOLBY-RAU-SCHUNTER-DRÜKUNGSS-CHALTER	EINSTEL-LEN	BEMERKUNGEN
		Positiv	Negativ				
1	Aufnahme-/Wieder-gabekopfazimut	Lautsprecherk-lemme	Lautsprecherk-lemme	10 kHz, -5 dB	OUT	Kopf-schraube	· Die Schraube so einstellen, daß das Röhrenvoltmeter den Höchstwert anzeigt.
2	Dolby-Rauschunt erdrückungspegel	TP803 (linker Kanal) TP804 (rechter Kanal)	TP403	400 Hz, 200 nWb/m	IN	VR401 VR402	· VR401 und VR402 so einstellen, daß das Röhrenvoltmeter 580 ± 20 mV anzeigt.
3	Aufnahmes-trom	TP401 (linker Kanal) TP402 (rechter Kanal)	TP403	–	IN	VR403 VR404	· Die Stifte Nr. 1 und 2 von MC2 anschließen. · Den Reserveeingangsbuchsen (AUX IN) 1 kHz, 410 mV zuleiten. · VR403 und VR404 so einstellen, daß das Röhrenvoltmeter 0,36 ± 0,02 mV anzeigt.

CARACTÉRSTIQUES

SECTION AMPLIFICATEUR

Puissance Des Sortie	Efficace, 14W x 2 (5% d.h.t., 4Ω) Un canal commandé Efficace 10W x 2 (5%d.h.t., 4Ω) Les deux canaux commandés
Sensibilité D'entrée & Impédance:	
Micro	1,5mV, 1,5kΩ
Aux	250mV, 47kΩ
Sortie Enregistrement & Impédance	150mV, 10kΩ
Correcteurs De Tonalité:	
Grave	± 8dB à 100Hz
Aigu	± 8dB à 10 kHz
Impédance De Sortie	4Ω

SECTION TUNER FM

Gamme De Fréquence	87,5MHz ~ 108MHz
Fréquence Intermédiaire (IF)	10,7MHz
Sensibilité	2,5μV (26dB S/B, mod. 40kHz) (DIN) à 300Ω
Rapport Image	35dB (98MHz)
Rapport Signal-Bruit	63dB (à 1 kHz, 60dB, 40kHz)
Distorsion	MONO: 0,5% (à 1kHz, 60dB, 40kHz) STÉRÉO: 0,6% (à 1kHz, 60dB, 40kHz)
Séparation Stéréo	40dB (à 1kHz, 60Hz, 40kHz)

SECTION TUNER AM

Gamme De fréquence	PO: 525kHz ~ 1605kHz (571m ~ 187m) GO: 150kHz ~ 350kHz (2000m ~ 857m)
Fréquence Intermédiaire (IF)	468kHz
Sensibilité	PO: 180 μV/m (1MHz) GO: 300 μV/m (240kHz)
Rapport image	PO: 40dB (1MHz) GO: 47dB (240kHz)

SECTION PLATINE MAGNÉTOPHONE

Système De Piste	4-Pistes, 2-Canaux
Système D'enregistrement	Systeme À Polarisation Alternative (50kHz) et Réducteur De Souffle Dolby
Système D'effacement	Effacement à Courant Alternatif (50kHz)
Vitesse De Défilement	4,75cm/s (1-7/8 i.p.s)
Réponse En Fréquence	35Hz ~ 15kHz (Ordinaire) 35Hz ~ 35kHz (Chrome) 35Hz ~ 16kHz (Fer) } (DIN)
Rapport Signal-Bruit	
DOLBY NR AU REPOS	50dB (Ordinaire) 52dB (Chrome) 52dB (Fer) } (DIN)
DOLBY NR EN SERVICE	58dB (Ordinaire) 60dB (Chrome) 60dB (Fer) } (10 dB ou plus amélioré à plus de 5kHz) (DIN)
Taux D'effacement	60dB (DIN)
Pleurage Et Scintillement	0,2% (WRMS)

SECTION TABLE DE LECTURE

Système De Lecture	Table De Lecture Entièrement Automatiquement À Entraînement À Courroie Avec Mise En Marche Et Mise En Sillon Initial Automatique
Plateau Tourne-Disques	28cm De Diamèyre (11")
Vitesse De Rotation	33-1/3 tr/min. et 45 tr/min.
Moteur Phono	Moteur C.C. À Électro-Régulateur
Pleurage Et Scintillement	0,15% (WRMS), ± 0,25% (DIN WTD)
Cellule	Cellule Céramique (EPC 09ST AD)
Pointe De Lecture	Pointe Diamant (ESP 27 STSD)
Gamme De Force D'appui	5 ~ 7g
PUISSANCE CONSOMMÉE	75W
ALIMENTATION	Secteur 110V, 120V, 220V, 240V, 50/60Hz
DIMENSION (LxHxP)	450 x 125 x 460 mm
POIDS	6,4 kg

• Les caractéristiques techniques sont sujettes à modification sans préavis et pour des raisons d'amélioration

INSTRUCTIONS D'ALIGNMENT-1

■ **Alignment de AM**

Position des commandes:

1. Réglage de volume . . . . . Position centrale (AM-IF et RF, FM-RF); Minimum (FM-IF)
2. Réglage de grave . . . . . Position centrale
3. Réglage d'aigu . . . . . Position centrale
4. Réglage de balance . . . . . Position centrale
5. Sélecteur de mode . . . . . MW, LW, FM AUTO, FM MONO
6. Interrupteur général . . . . . ON
7. La sortie du générateur de signaux ne doit pas être plus élevée que nécessaire pour obtenir une indication de sortie.
8. S'assurer que l'enceinte acoustique est raccordée à l'ampli-tuner au moment d'effectuer l'alignement (ou utiliser des resistances de charge fictive de 4 Ω)

ETAPE	GÉNÉRATEUR DE SIGNAUX OU GÉNÉRATEUR DE BALAYAGE		POSITION DU CURSEUR SUR LE CADRAN	VOLTMETRE ou OSCILLOSCOPE	AJUSTER	REMARQUES
	CONNEXION	FREQUENCE				
ALIGNMENT DE F.I. ET H.F. EN AM						
1 (MW)	Former une boucle de plusieurs tours de câble et faire rayonner le signal par la boucle de l'ampli-tuner.	468 kHz à 30 % modul. 400 Hz	Point de non interférence	Voltmètre sur la prise du haut-parleur gauche (L).	T201 (AM IF) T202 (AM IF)	Ajuster pour obtenir un niveau de sortie maximum
2 (MW)		513 kHz à 30%modul. à 400 Hz	513 kHz		L203 (MW OSC) L201 (MW ANT)	Ajuster pour obtenir un niveau de sortie maximum en faisant coulisser la bobine L201 le long du noyau en ferrite. **Se référer à la remarque.**
3 (MW)		1645 kHz à 30 % modul. à 400 Hz	1645 kHz		CT203 (Trimmer MW OSC) CT201 (Trimmer MW ANT)	Ajuster pour obtenir un niveau de sortie maximum. Répéter les opérations (2) et (3).
4 (LW)		142 kHz à 30 % modul. à 400 Hz	142 kHz		**L204** (LW OSC) L202 (LW ANT)	Ajuster pour obtenir un niveau de sortie maximum en faisant coulisser la bobine L202 le long du noyau en ferrite. **Se référer à la remarque.**
5 (LW)		363 kHz à 30 % modul. à 400 Hz	363 kHz		CT204 (trimmer LW OSC) CT202 (trimmer LW ANT)	Ajuster pour obtenir un niveau de sortie maximum. Répéter les opérations (2) et (3).
Remarque: Cimenter la bobine d'antenne L201, 202 à la cire après avoir terminé l'alignement.						
ALIGNEMENT FM-IF						
1	Position haute par 5 pF à TP101 et TPE (masse).	10.7 MHz (400 kHz SWP).	Point de non interférence	Connecter l'entrée de l'amplif. vert. de l'oscilloscope à TP201 et TP202 (masse).	T101 (FM IF) T203 (Disque FM)	Ajuster pour que l'amplitude soit maximale et la courbe symétrique. **Se référer à la remarque**
2					T204 (FM IF) T203 (disque FM)	Ajuster pour que l'amplitude soit maximale et linéarité appropriée entre des mesures d'environ ± 100 kHz
Remarque: Avant de procéder à l'alignement dans étape 1, tourner les noyaux de T204 à found dans le sens contraire des aiguilles d'une montre.						
ALIGNEMENT FM-RF						
1	Raccorder la borne d'antenne EXT. FM par l'intermédiaire d'une antenne fictive. (300 ohms).	87,35 MHz à 30 % modul. à 400 Hz.	87,35 MHz Placer l'indicateur d'accord en bout gauche d'échelle graduée. (ou sur la fréquence la plus basse.)	Voltmètre sur la prise du haut-parleur gauche (L).	L102 (Bobine FM OSC) L101 (Bobine FM ANT)	Ajuster pour obtenir un niveau de sortie maximum.
2		108,3 MHz à 30 % modul. à 400 Hz.	108,3 MHz (Placer l'indicateur d'accord en bout droit d'échelle d'accord. (ou sur la fréquence la plus élevée.)		CT102 (trimmer FM OSC) CT101 (trimmer FM ANT)	Ajuster pour obtenir un niveau de sortie maximum. Répéter les opérations (1) et (2)
Remarques: **1. Comme on aura trois lectures de sortie présentes, les réglages doivent être faits à la fréquence centrale.** **2. Pour corriger la dérive sur l'échelle d'accord FM (87,5 ou 108 MHz), régler la bobine L102 et le condensateur d'antenne CT102 l'un avec l'autre.**						

■ **Alignment st**

Position des co	
CONN	
Raccorder un (terre) à 98 M (signal mono)	

■ **Alignment du**

Position des co	
ETAPE	PAR D'ALIGN
1	Prémagné effaceme
2	Prémagné d'enregis

Positions des	
ETAPE	PAR D'ALIGN
1	Azimut combiné -lecture
2	Niveau d Dolby
3	Courant enregistr

INSTRUCTIONS D'ALIGNMENT-1

■ **Alignment de AM**

Position des commandes:
1. Réglage de volume . . . . . Position centrale (AM-IF et RF, FM-RF); Minimum (FM-IF)
2. Réglage de grave . . . . . Position centrale
3. Réglage d'aigu . . . . . Position centrale
4. Réglage de balance . . . . . Position centrale
5. Sélecteur de mode . . . . . MW, LW, FM AUTO, FM MONO
6. Interrupteur général . . . . . ON
7. La sortie du générateur de signaux ne doit pas être plus élevée que nécessaire pour obtenir une indication de sortie.
8. S'assurer que l'enceinte acoustique est raccordée à l'ampli-tuner au moment d'effectuer l'alignement (ou utiliser des resistances de charge fictive de 4 Ω)

ETAPE	GÉNÉRATEUR DE SIGNAUX OU GÉNÉRATEUR DE BALAYAGE		POSITION DU CURSEUR SUR LE CADRAN	VOLTMETRE ou OSCILLOSCOPE	AJUSTER	REMARQUES
	CONNEXION	FREQUENCE				
ALIGNMENT DE F.I. ET H.F. EN AM						
1 (MW)	Former une boucle de plusieurs tours de câble et faire rayonner le signal par la boucle de l'ampli-tuner	468 kHz à à 30 % modul. 400 Hz	Point de non interférence	Voltmètre sur la prise du haut-parleur gauche (L).	T201 (AM IF) T202 (AM IF)	Ajuster pour obtenir un niveau de sortie maximum
2 (MW)		513 kHz à 30%modul. à 400 Hz	513 kHz		L203 (MW OSC) L201 (MW ANT)	· Ajuster pour obtenir un niveau de sortie maximum en faisant coulisser la bobine L201 le long du noyau en ferrite. · **Se référer à la remarque.**
3 (MW)		1645 kHz à 30 % modul. à 400 Hz	1645 kHz		CT203 (Trimmer MW OSC) CT201 (Trimmer MW ANT)	Ajuster pour obtenir un niveau de sortie maximum. Répéter les opérations (2) et (3).
4 (LW)		142 kHz à 30 % modul. à 400 Hz	142 kHz		L204 (LW OSC) L202 (LW ANT)	Ajuster pour obtenir un niveau de sortie maximum en faisant coulisser la bobine L202 le long du noyau en ferrite. **Se référer à la remarque.**
5 (LW)		363 kHz à 30 % modul. à 400 Hz	363 kHz		CT204 (trimmer LW OSC) CT202 (trimmer LW ANT)	Ajuster pour obtenir un niveau de sortie maximum. Répéter les opérations (2) et (3).
Remarque: Cimenter la bobine d'antenne L201, 202 à la cire après avoir terminé l'alignement.						
ALIGNEMENT FM-IF						
1	Position haute par 5 pF à TP101 et TPE (masse).	10.7 MHz (400 kHz SWP).	Point de non interférence	Connecter l'entrée de l'amplif. vert. de l'oscilloscope à TP201 et TP202 (masse).	T101 (FM IF) T203 (Disque FM)	· Ajuster pour que l'amplitude soit maximale et la courbe symétrique. · **Se référer à la remarque**
2					T204 (FM IF) T203 (disque FM)	Ajuster pour que l'amplitude soit maximale et linéarité appropriée entre des mesures d'environ ± 100 kHz
Remarque: Avant de procéder à l'alignement dans étape 1, tourner les noyaux de T204 à found dans le sens contraire des aiguilles d'une montre.						
ALIGNEMENT FM-RF						
1	Raccorder la borne d'antenne EXT. FM par l'intermédiaire d'une antenne fictive. (300 ohms).	87,35 MHz à 30 % modul. à 400 Hz.	87,35 MHz Placer l'indicateur d'accord en bout gauche d'échelle graduée. (ou sur la fréquence la plus basse.)	Voltmètre sur la prise du haut-parleur gauche (L).	L102 (Bobine FM OSC) L101 (Bobine FM ANT)	Ajuster pour obtenir un niveau de sortie maximum.
2		108,3 MHz à 30 % modul. à 400 Hz.	108,3 MHz (Placer l'indicateur d'accord en bout droit d'échelle d'accord. (ou sur la fréquence la plus élevée.)		CT102 (trimmer FM OSC) CT101 (trimmer FM ANT)	Ajuster pour obtenir un niveau de sortie maximum. Répéter les opérations (1) et (2)

Remarques:
1. **Comme on aura trois lectures de sortie présentes, les réglages doivent être faits à la fréquence centrale.**
2. **Pour corriger la dérive sur l'échelle d'accord FM (87,5 ou 108 MHz), régler la bobine L102 et le condensateur d'antenne CT102 l'un avec l'autre.**

INSTRUCTIONS D'ALIGNMENT-2

■ **Alignment stéréo FM**

Position des commandes: Réglage de volume . . . . . Niveau audible du son de haut-parleur
Réglages de grave, d'aigu . . . . . MIN
Sélecteur de bande . . . . . FM AUTO
Réglage de balance . . . . . Position centrale

CONNEXION DES INSTRUMENTS	REGLAGE	REMARQUES IS
Raccorder un fréquencemètre à TP301 et TP202 (terre) à 98 MHz (entrée 60 dB sans modulation (signal mono).	VR301	Ajuster la résistance VR301 pour que le fréquencemètre indique 19,10 kHz ± 50Hz

■ **Alignment du magnétophone à cassette**

ALIGNEMENT DE PREMAGNETISATION

Position des commandes:
1. Réglage de la platine . . . . . Mode d'enregistrement
2. Commutateur Dolby . . . . . OUT
3. Commutateur de suppression de sifflement . . Sur B

ETAPE	PARTIE D'ALIGNEMENT	CONNEXION DU VOLTMETRE		CONDITION DU MAGNETOPHONE	REGLAGE	REMARQUES
		Positif	Négatif			
1	Prémagnétisation effacement	TP801	TP802	METAL	VR803	Ajuster VR303 pour obtenir une indication de 150 ± 5mV au voltmètre électronique.
2	Prémagnétisation d'enregistrement	TP401 (canal gauche) TP402 (canal droit)	TP403	NORMAL	VR801 VR802	· Ajuster VR802 pour obtenir une indication de 3,8 ± 0,1 mV au voltmètre électronique. (Fer pur: 8,4 ± 1mV) (Chrome: 4,9 ± 0,2 mV) · Ajuster VR801 pour obtenir la même tension

ALIGNEMENT COURANT D'ENREGISTREMENT, DOLBY, AZIMUT

Positions des réglages:
1. Réglage de la platine . . . . . Mode de lecture
2. Sélecteur de bande . . . . . NORMAL

ETAPE	PARTIE D'ALIGNEMENT	CONNEXION DU VOLTMETRE		Niveau bande d'étalonnage	Commutateur Dolby	REGLAGE	REMARQUES
		Positif	Négatif				
1	Azimut de tête combinée enregis. -lecture	Borne de haut-parleur	Borne de haut-parleur	10 kHz - 5 dB	OUT	Vis de tête	· Ajuster la vis pour obtenir une indication maxi. au voltmètre électronique.
2	Niveau du Dolby	TP803 (canal gauche) TP804 (canal droit)	TP403	400 Hz 200 nWb/m	IN	VR401 VR402	· Ajuster VR401 et VR402 pour que le voltmètre électronique indique 580 ± 20 mV.
3	Courant enregistrement	TP401 (canal gauche) TP402 (canal droit)	TP403	–	IN	VR403 VR404	· Raccorder les broches No.1 et 2 de MC2. · Appliquer un signal de 1 kHz, 410 mV à AUX IN. · Ajuster VR403 et VR404 pour que le voltmètre électronique indique 0 36 ± 0,02mV.